SIX DOLLARS A YEAR—ONE DOLLAR A COPY

August 1954

house + home

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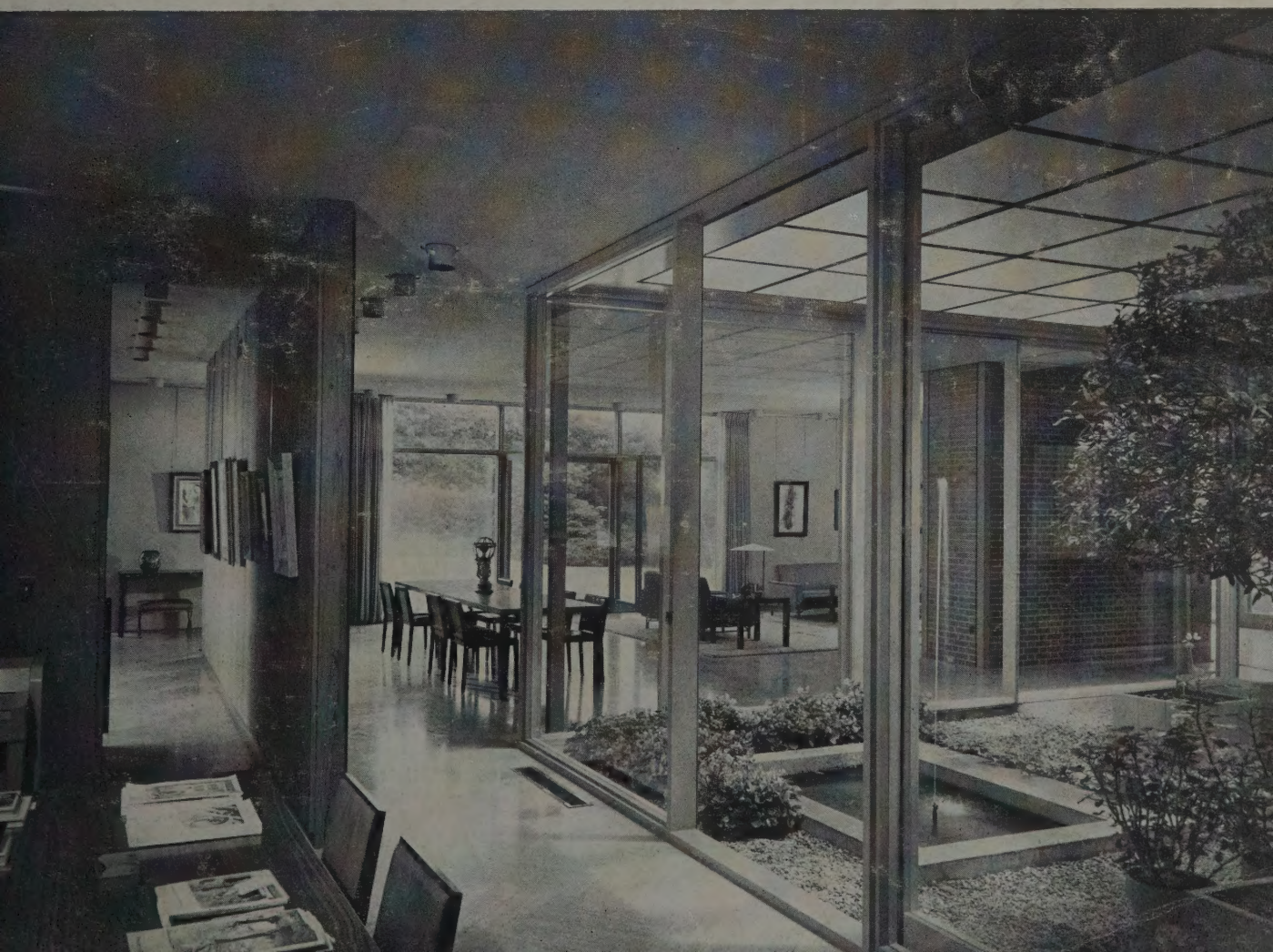

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State of homebuilding

▸ Burst of new subdivisions reflects builder confidence in sales prospects as mortgage money stays plentiful

▸ Birth rates—far above all predictions—provide a prop for optimism. Some experts see 2 million homes a year

Midpoint in 1953 was distinguished by more good news of construction volume. Total first-half expenditures were listed by BLS and the Commerce Dept. at a record $16.6 billion, with private expenditures making up $11.4. Private spending ($2.2 billion) and public ($1.1 billion) both reached a peak in June.

Experts forecasting a year-end figure for housing starts were raising their estimates. One top federal housing man predicted 1.2 million starts—20% more than he was forecasting six months ago. Pat Riley, BLS construction statistics chief, told HOUSE & HOME informally he thought this mark was "possible." The official BLS estimate was upped 10% to 1.1 million.

The nothing-down house continued to give home sales a special impetus; in some states — notably Florida — buyers were not even paying closing costs in cash on the nothing-downs. The pull of the latter was causing some increase in rental housing vacancies, but over the nation the vacancy rate was not worrisome. Sale of old houses was still slow, but new ones were going nicely, with plenty of mortgage money available. A Houston banker admitted to signs of greater salesmanship on the builders' part, but added that it was "a terrific year." One bright spot: shipment of prefabs through May was up 17.6% over the figure for the first five months of last year.

Another: the birth rate continued to confound statistical projections, with emphasis on the second, third and fourth children. The marriage rate was down, but births would balance up this decline with a need for bigger and better houses (as builders knew). A survey in Chicago showed that twice as many newlyweds had homes of their own to move into this June as last. Reasons: higher apartment rents, easier home financing and stable construction costs.

For many a builder, it was a season for major land development plans, the result (in part) of the fact that the nation was rapidly exhausting the supply of developed homebuilding sites. Houston Builder Frank W. Sharp announced plans for a subdivision of 15,000 homes plus shopping centers, theaters, banks and office buildings. In ten years, Sharp hoped this might rival Levittown, L.I. as the nation's largest residential development. Contractor Del Webb announced plans for a 6,000-home community near Denver, and another builder planned an 8,000-home development nearby (see Builders at Work, p. 45).

Sales of room air conditioners, hard hit by a cool spring, perked up as a heat wave spread over the East and Midwest. Sales would probably still fall short of the peak predicted by the industry last winter, however.

The government was moving into the fiscal new year with confidence. As one economist put it: "Our forces for economic growth have been buttressed." Employment figures were the best since last autumn's downturn, with almost no change in unemployed from May to June as opposed to an average increase of 400,000 in that month since the war. With such stabilization, some thought this would be the first postwar year in which the home buyer's dollar bought as much cubic footage as it had the year before.

Price hikes for steel, other items may up house costs

Homebuilders were split on the question of whether a steel price increase of $3 a ton would raise the cost of a house; many were more concerned over lumber prices. On the steel question, estimates varied from a view that the price rise would be "absorbed along the way" to an expectation of a building cost increase of 3 to 5% in the next six months.

"I think the fabricators are working on such a small margin already that they can't absorb this new increase," said a New Jersey builder. Several were concerned with the fact that a steelworker wage increase eventually means a rise in other trades. Most thought that since steel plays so small a part in home construction, it was probable that the price of the home would be only faintly changed.

"I expect the steel increase to have no effect on our house prices," said a Long Island builder now working on a 1,100-unit development. "Our big problem is lumber. The steel increase amounts to an increase in our costs of $4 to $5. The lumber increases can drive our costs up several hundreds. Lumber amounts to 40% of our $10,000 house.

Whatever happened to lumber prices, not only steel but also cement and brick, for instance, were selling above last year's levels. The developing pattern of labor wage increases of around 8 to 11¢ an hour meant construction labor would be 3 to 4% more costly in many areas. The fact that the Federal Reserve Board again lowered reserve requirements would tend to drive down interest rates which in turn stimulates borrowing and building.

The checkrein of more competition and harder sales would hold down the price of housing for a while. (The US Savings & Loan League noted that new homes in the low- and medium-price brackets were going unsold for about a month longer than a year ago.) But eventually house prices must yield to building costs. The outlook seemed to be up.

Big postwar rent rise over; some cities feel vacancies

In Memphis last month, rental property managers were telling their owner-clients the city was overbuilt, that owners would have to meet the competition of GI and public housing with lower rents, more maintenance or both. Said Realtor William D. Galbreath: "A great many rents have already been reduced. More must follow." Hardest hit, rental operators agreed, were one-family homes converted to apartments. But postwar 608 rentals were weak, too; many were renting for $70 a month up with the tenant paying for heat, gas and electricity. Now, VA nothing-down homes with three bedrooms were on the market with $60-a-month payments.

The rental market in Memphis was weaker than in most US cities. But vacancy signs again were going up in more and more places. Said a Washington, D.C. housing man: "The increase in vacancies has been creeping up on us for some weeks, but we have been hearing more complaints in the last 30 days." He attributed the change to "move-outs stemming from no-down-payment buying." In Milwaukee, owners and landlords reported the city was "starting to get back to a normal market." A few landlords were offering to cut rents $2 to $5 a month to retain tenants. In Lubbock, Tex. realty men blamed a 500-unit Wherry Act military housing project for six foreclosures of Sec. 608 and 207 rental projects in the last eight months.

Nobody was even worrying about a threat of mass housing vacancies across the country; it seemed remote. But it was clear that the great postwar rise in rents was over. BLS' national rent index told the story:

Month	*Index*	*Month*	*Index*
Jan. '48	98.8	Apr. '53	122.1
Jan. '49	103.3	July '53	123.8
Jan. '50	107.5	Oct. '53	126.8
Jan. '51	110.6	Jan. '54	127.8
Jan. '52	116.6	Apr. '54	128.2
Jan. '53	121.1	May '54	128.3

The last big jump in rents came between July and Oct. '53—following the end of

federal rent controls. Since December, the leveling off has been unmistakable. Percentagewise, the figures reveal even more. Since the month before rent controls ended, the national rent level has jumped 3.6%. But since this January, it has gained only 0.4%. This leaves the US rent index no higher than it was in the 20's. But the national disposable income is three times the level of the 20's.

Electric future for housing prophesied to financiers

"Since 1900, the electric industry has been expanding three times as fast as the average for all industries. And looking ahead, as much electrical equipment will be built, sold and installed in the next ten years as has been built in the entire 75-year history of the electrical industry!"

This ebullient prediction by W. V. O'Brien, vice president of General Electric Co., was representative of a recent upsurge of enthusiastic opinion on the prospective growth of the electrical market. O'Brien figures that by 1964 the average electrified home will have $5,000 worth of the sort of products now sold by the big electrical companies, as opposed to a present investment of $1,300 for such products. Some excerpts from his speech before the National Federation of Financial Analysts Societies in Chicago:

"In the next ten years we confidently expect that refrigerators will approach a 100% saturation, rising from today's 90%. Home-freezer installations will triple; ranges and electric water heaters will almost double; clothes driers will jump almost five times over today's level; and very significantly, room air conditioners will increase 11 times. By 1964 we look forward to 66 million home television receivers in operation, 44 million of which will be color sets using almost twice as much electric power per receiver.

"Within the decade, the growth of these and all other well-established home appliances will multiply more than 2½ times the total kilowatt-hours used by such appliances today.

"This increase does not take into account those newly introduced appliances which will play an important role in the electrical future. For example, there is the heat pump, a newcomer in the appliance field, for which there are great expectations . . . [for this] combination home heating and cooling unit whose only fuel is electric power. Today this unit is installed in only a few thousand dwellings, mostly in the southern states. But with mass-production techniques and greatly improved technical advances already under way, it is anticipated that the heat pump will soon rival the cost of any other means of home heating anywhere. Consequently, we are forecasting that over half a million homes will be equipped with heat pumps by 1964.

"In addition to today's established appliances and the newcomers already on the market, still other home appliances will create new loads for the utilities in the decade ahead. Here are just a few envisioned in the near future:

1. An electric incinerator that will dispose of trash as well as waste food, and will even sanitize cans and bottles.
2. A television screen that can be hung like pictures on the wall, connected only by a thin wire to the television receiver.
3. An electronic device for thawing frozen foods very quickly.
4. Still another electronic device for cooking foods in a matter of seconds.

"There are many other such products, of course. But these few examples serve to illustrate new and expanding uses for electric power that will come from a continuous pattern of product development.

"The significance of this projection extends far beyond our own electrical industry; here is a valid index to the growth and potential of all aspects of our national life. Because of its tremendous capacity for multiplying human effort, electric power is a prime cause of progress, not a luxury that follows in the wake of progress. In our modern world, the availability of electric power determines, to a large degree, the standard of living, the prosperity, the cultural vitality and the military security of a nation."

Segregation suits may hit project builders; New York tightens its open occupancy law

A convention in Dallas, a new ordinance in New York and a lawsuit in Shreveport gave further clarity last month to the direction and methods of moves and plans to end segregation in housing.

The attack on segregation would be legal. Its spearhead would be the National Association for Advancement of Colored People. Its impetus was the Supreme Court's decision (H&H, July '54, News) outlawing segregation in schools and the court's refusal to hear an appeal from a California ruling barring segregation in public housing projects.

Target: mass builders. As already indicated by NAACP's suits against realtors and developers in Sacramento, Calif. (H&H, June '54), one big target of the drive to compel "open occupancy" will be builders of FHA- and VA-backed housing projects. At NAACP's annual convention last month in Dallas (where, because of segregation, meetings were held in churches and a wrestling arena), Mrs. Constance B. Motley outlined both accomplishments and objectives. Mrs. Motley, 32, is a New York lawyer and chairman of NAACP's housing committee. She noted that NAACP already had won seven cases in five states (New Jersey, Michigan, California, Ohio and Indiana) involving segregation in public housing projects. "We have been successful in this area," she said, "and have opened many public housing projects without litigation—just by discussing it."

The emphasis in the future, she announced, will be on private housing. "By private housing, I mean mass projects of many units which exclude Negroes by virtue of race. . . . We don't plan to enter small-scale activity against homeowners who do not want to sell to Negroes. . . . Our argument against discrimination in private housing — projects which may number 200 units—is that exclusion of Negroes there is in effect banning them from a community. One project in New York of 16,000 homes is a town in itself, with about 50,000 inhabitants. We feel such projects are almost public utilities. . . ."

First in the nation. In New York City, an ordinance went into effect outlawing racial discrimination in apartment buildings built or "habilitated" with the aid of federal, state or city loans or guarantees. It was the first such law in the nation. It was not retroactive, but would apply to some 2,000 FHA-backed apartments now rising in Brooklyn and Queens (where 95% of the 96,000 multifamily dwellings built since World War II have gone up with FHA aid). New York already had a law prohibiting discrimination or segregation in projects receiving direct or indirect aid from city, state or federal taxes.

In Shreveport, two Negroes (with NAACP legal aid) filed suit in federal district court asking that local FHA Chief Henry Allen, Acting Commissioner Norman Mason, the sponsoring Jerry Goodman Co. and Bossier Construction Co. be compelled to go ahead with a Sec. 213 cooperative. The $1 million 255-unit project, Clarke Terrace, was intended for Negro occupancy on a site just southwest of Shreveport. When residents of a nearby white community found out, they put enough pressure on the police jury of Caddo parish so the jury refused a building permit. The sponsors then obtained FHA approval to change sites. The new location: inside Shreveport in an established Negro belt. FHA officials said this was the first racial case brought against 213.

Ahead: policy review. All the legal battling could produce some ironic results. Already, some top government housing officials were doing some serious thinking about whether the government should drop its minority housing programs. If the government, following the policy enunciated in Supreme Court decisions, was going to stress equal housing facilities for Negroes, how could it logically maintain units to help get special treatment for minority housing? The very existence of such units tacitly admitted that Negroes do not have equal access to the housing market and therefore need special programs designed especially for them.

Reni photos

AS SENATE PROBE OPENS, Chairman Capehart (with pencil) asks a question while Sen. Goldwater (l), Staffer McMurray and Counsel Simon huddle on a point. Maybank (r) listens, chin in hand.

FIRST WITNESS McKenna dragged big names into windfall profit charges, including former Housing Expediter Wilson Wyatt, three members of the du Pont family. He accused ousted FHA of discouraging investigations.

Senators call 608 builders on the carpet

- **Ignoring White House urging to wait until the housing bill is adopted, banking committee begins lengthy hearings**
- **Two ex-FHA officials and some builders invoke Fifth Amendment. Democrats charge GOP with smear attempts**

The Senate banking committee steamed ahead last month, accusing government officials and private citizens of a variety of misdeeds, including free fishing trips and profiteering. A suggestion from the White House that the investigation of FHA wait until the new housing bill was safely out of conference went unheeded. With the McCarthy sideshow over, Sen. Capehart and friends were in a position to regain the klieg lights. During the resumption of the public hearings last month they heard an increasing number of allegations of impropriety in high (and low) places of the sort they had previously heard and were also treated to a few new versions.

On the Senate floor, meanwhile, Sen. Harry Byrd (D, Va.) whose own investigation of FHA had been eclipsed by Republican Capehart's, boiled over with his most vitriolic summation of the situation to date. Said Byrd: "I am convinced that the whole federal housing program constitutes the greatest invitation to malfeasance and moral turpitude perpetrated by the federal government in recent times. . . ."

'Smelly deals.' It was a month when the housing industry had to suffer a lot of similar denunciations—generally in pained silence. Sen. Capehart was quoted several times on his belief that the investigation will expose many "smelly, rotten deals." The daily press fell in with the prevailing winds of rhetoric and opinion. Columnist Fred Othman wrote a story about former FHA General Counsel Burton Bovard ("a trembly little man . . . with cigaret vibrating on his lips"), commented on bribe-taking in the capital and discussed the much-discussed Shirley-Duke apartment deal in Alexandria. The Washington *Star* offered an editorial on practitioners of the profit-loaded 608s which said: "The fact that so much of this apparently was done by taking advantage of loopholes in the federal housing law may save some of the profiteers from any prosecution but it does not make them honorable men. . . . If otherwise respectable individuals chose to operate in this questionable area it is not unfair to judge them by the company they kept." Scripps-Howard editors, while lacking the style of the *Star*, turned a blowtorch on the "more reprehensible" FHA officials, who knew of the "irregularities" but did not act. "These are the babies," wrote Scripps-Howard, "we hope the Justice Dept. can nail, but good!"

Ask me no questions. Such bristling comment from the senators and press was at least partially caused by listening to two ex-FHA men invoke the Fifth Amendment and refuse to talk to the senators. One of them—Clyde L. Powell, who "resigned" as an assistant FHA commissioner—stood on his constitutional right that "no man may be compelled to testify against himself" even when confronted with accusations that he concealed a police record when he applied for his FHA job 20 years ago. Powell had been the first official singled out as a scapegoat after Guy Hollyday's ouster as FHA commissioner in April, with circulation of reports that he had suffered heavy gambling losses. Now, the FBI dossier read into the record showed Powell pleaded guilty to a larceny charge in 1917 and received a suspended sentence. He had also been up on several charges of passing bogus checks and one of embezzlement.

Atty. William McKenna, deputy HHFAdministrator in charge of investigating FHA, testified that neither of two FBI reports on Powell's record sent to the Civil Service Commission for transmission to FHA can be found in the latter's offices. The fact that Powell had been in charge of the rental housing part of FHA from its inception until the firecracker went off does nothing to soothe the feelings of persons who have formed an antipathy to other people's 608 profits.

The other official who clammed up was Andrew Frost of Albuquerque, who was dismissed late in June as assistant FHA director in New Mexico. Frost decided he would not say yes or no to a series of questions on whether he did or did not attend a couple of girlie parties given by contractors, go south to fish at contractor expense, accept a gift of a couple of truckloads of concrete blocks for his own house.

Burton Bovard, who continued to provoke the ire of the senators by telling them he did not know of any "windfall" profits by builders under 608, also told them a quaint tale about the 1,137-unit Woodner apartment-hotel in Washington. Asked by Capehart how the edifice could have been built with an FHA-insured mortgage of $7.5 million when the law specified that no single project amount to more than $5 million, Bovard explained that the big building had been set up as two "legal entities," with provision for a wall through the middle. Bovard said he thought the wall had been built, but was "not sure."

Root of all evil. The nub of the inquisition was still 608—though Title I repair loan frauds would get the spotlight later. Tales of extra-curricular contact between official and customer (reports were submitted at the hearings of FHA men receiving wristwatches and

SHIRLEY-DUKE Project Builders Herman W. Hutman, Byron Gordon Jr. and Earl J. Preston were accused by probers of "discrepancies" in their testimony.

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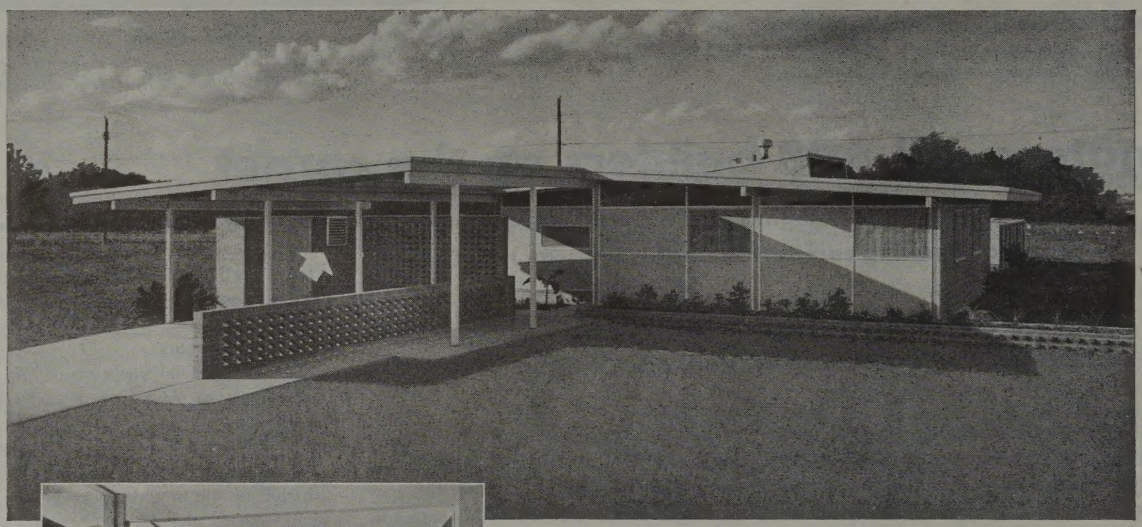

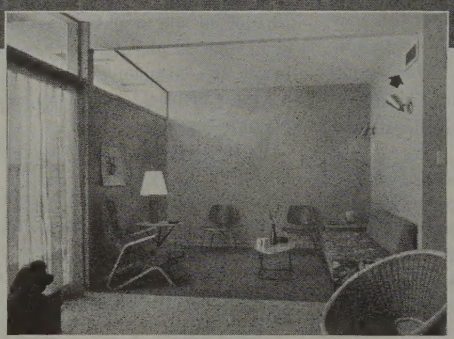

House in NAHB Air Conditioned Village, Austin, Texas, designed for Chrysler Airtemp *Air-Cooled* Air Conditioning by Fred W. Day and built by Wayne Burns. Cooling coil is located above Chrysler Airtemp Gas Furnace in hall closet. Air-cooled condensing unit for *waterless* cooling is mounted in wall of storage area at rear of carport at point marked by arrow in top photo.

High wall method of air distribution was used because of successful experience of builder and installer with this method in other homes in area. Compact duct system is confined to least used area of house.

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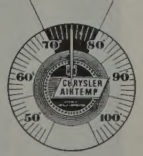

HH-8-54

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television sets from satisfied builders) were nothing compared to the drive to get to the bottom of the so-called windfalls. It is notable that only the briefest factual mention has been made in the investigation of just what, if anything, the taxpayers have lost because of high profits on 608s. There has been no mention of how few foreclosures FHA has had to make on 608s. The senators were pointing an accusatory finger at corporations that had made big money overnight, but they seemed naively unaware that Congress intended 608 profits to be big in order to get a lot of housing built in a hurry. The present implication that FHA-backed housing should have limited profits is ex post facto.

"Wipe the smiles off your faces," Capehart told three Washington area builders (cut, p. 35) as they were admitting to an aggregate gain of $2 million on an original investment of $6,000. The three—Herman Hutman, Earl J. Preston and Bryan Gordon Jr.—told how they got $13,846,000 in FHA-insured loans to put up the Shirley-Duke apartments in Alexandria. They said they listed architect's fees of $750,000 instead of the $63,000 they had actually paid; got the land valued at more than $500,000, although they had purchased it for $178,000; went on the payrolls of separate corporations at salaries of $20,000 apiece. The $14 million was borrowed from Investors Diversified Services (now controlled by Robert R. Young's Alleghany Corp.). Earl E. Crabb, executive committee chairman of IDS, testified IDS received only $919,000 in fees—on a $14 million risk. But the role of IDS' Washington Manager Don Loftus could not be so easily explained away. Unbeknownst to IDS, and later dismissed for it, he made a big personal profit by buying into the project early in the game.

William Simon, newly appointed counsel for the banking committee's investigation, asked Carl Budwesky, counsel for the apartment project sponsors: "If your original application had shown the facts we have talked about here today, do you think it is conceivable FHA would have issued the commitment?"

BUDWESKY: "What facts are you talking about?"

SIMON: "That the financing expenses would be 6½%, that the architect's fee would be half of 1%, that the equity capital would be $1,000—if all that had been in the application is it conceivable FHA would have issued the commitment?

Budwesky argued with Simon about whether the application required any showing of equity capital at all. Commented Capehart: "There are a lot of things we don't seem to be able to conceive of around here."

Also resurrected was the old Indiana scandal involving the late R. Earl Peters, ex-FHA state director, fired for insuring his own Fort Wayne 608 through his own office (H&H, Feb. '52, News). On the witness stand, Mortgage Broker Charles H. Glueck of Gary, Ind. denied acting as "front" man for Peters on the deal. Glueck insisted that he had made a profitless sale to Peters of a half share in the project.

Democrats and taxes. Burned by an increasing tendency among the investigators—especially the red-thatched McKenna—to zero in on the policy-makers of the Truman administration, Democratic senators felt obliged to get in some historical comment on the 608 program. Sen. Sparkman (D, Ala.) interrupted McKenna on June 28 with the statement: "We have known about this mortgaging out for a long time." He pointed out that attempts by Sen. Russell Long (D, La.), who was a member of the banking committee in 1950, to tighten up the 608 program to prevent mortgaging out were defeated, and reiterated that mortgages were based only on estimated costs. Sparkman's view: "If Congress failed to tighten up the law, it could not escape responsibility for any abuses that may have occurred."

Sen. Burnet Maybank (D, S.C.), the ranking Democratic member of the committee, told HOUSE & HOME after one of the sessions that he thought when the group really got down to bedrock on the 608 deals it would find that "the tax law was chiefly responsible for whatever profiteering went on." The senator's comment clearly implied that a builder's desire to take advantage of the present interpretation that excess monies on apartment projects are capital gains was the actual motivation in persuading him to mortgage out. The tax law has already appeared as a potential weapon in the fracas—a test case is being run by Internal Revenue on the premise that a builder's excess monies are really ordinary income and Sen. Byrd has a provision in the new tax bill which would classify them as that.

Another point that interested Maybank: if tenants were being fleeced by exorbitant rents due to cost padding on 608s, why has the present command of HHFA and FHA not done something about it—like ordering a rent reduction?

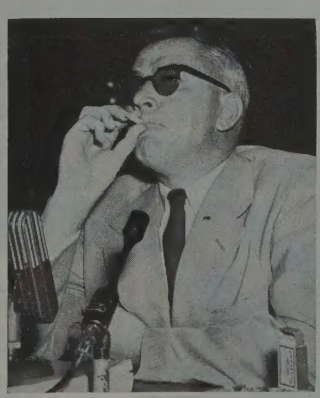
Industry reaction. If the opposition's politicians sensed that the investigators were shooting around the target, so did the building profession profess consternation at damage being caused by the committee's approach. Commented one builder: "The Republicans are so anxious to magnify the sins of the FHA as its program was conceived and carried out under the Democrats that they are willing to leave the implication in the public's mind that the building industry is dominated by crooks. They are even questioning the profit motive. It doesn't make sense."

Even Big Builder William J. Levitt got on the committee's hook. On the witness stand, Levitt recalled his firm received $29,946,500 in mortgage loans for 4,028 Cape Cod rental houses in Levittown, Long Island, insured under FHA Sec. 603. Final construction cost: $24,168,000, almost $5 million under the mortgage amount (or about $1,250 a house). The Levitts later sold their stock in the corporation created for this phase of the huge project, Bethpage Realty Co., to Junto, Inc., described by Levitt as a Philadelphia "charitable organization." Stock sale was subject to capital gains tax, whereas dividends, had they been divided among stockholders, might well have been subject to much steeper income taxes. Capehart called the profit a "windfall." It was no such thing, Levitt insisted. He defined a windfall as profit pocketed by a builder who kept the property, giving him the prospect of still more profit on sales or rents. His $5 million was simply building profit, said Levitt. Next day, builders began

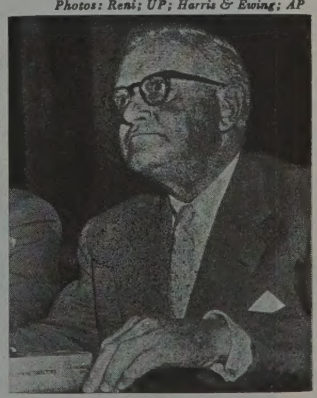
Photos: Reni; UP; Harris & Ewing; AP

IDS' EARL CRABB
Did his Washington man profiteer?

MORTGAGE BROKER CHARLES GLUECK
Profitless deal with a dead man?

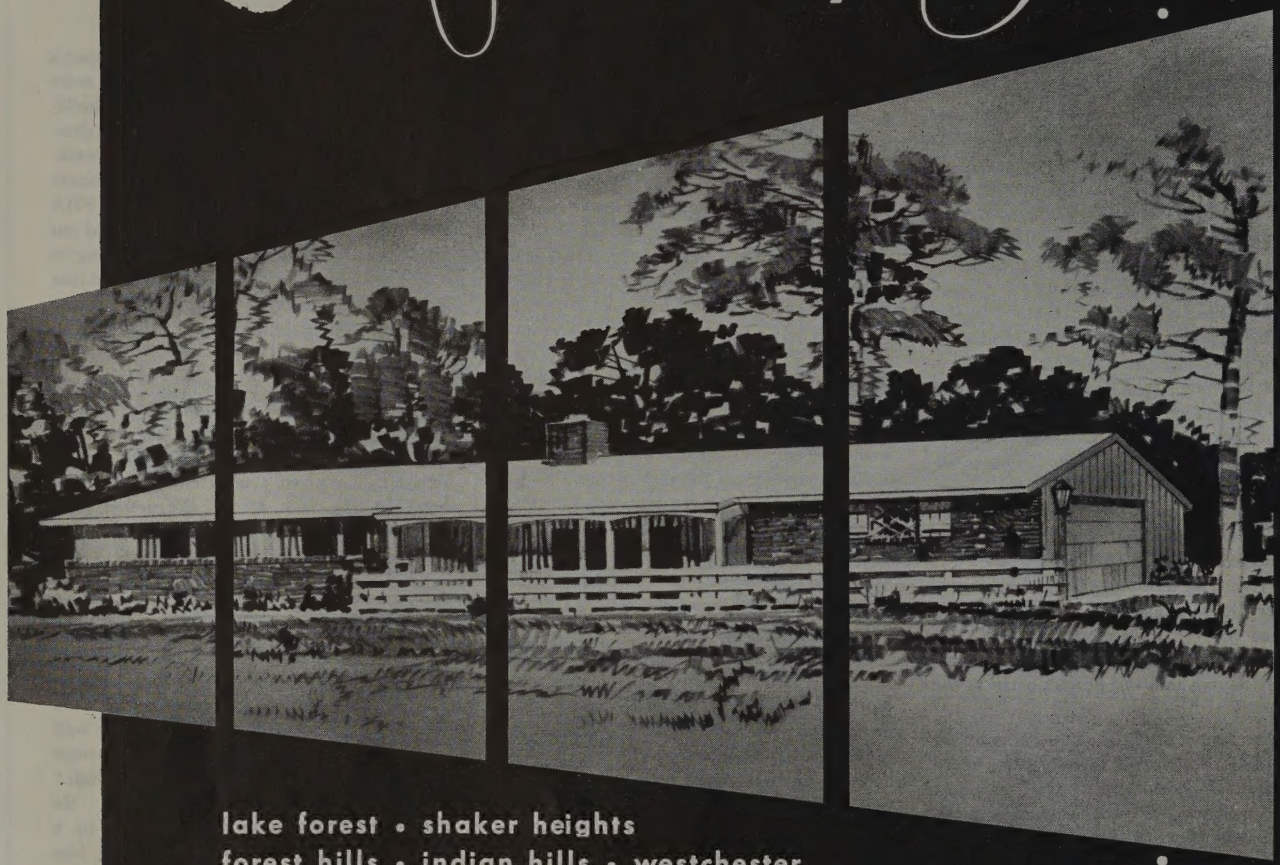


FHA'S ANDREW FROST
Fifth Amendment girlie parties?



FHA'S CLYDE POWELL
A second refusal to testify

California Contemporary by scholz



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These are typical of the exclusive suburbs in nearly every middle western and eastern city, where Scholz California Contemporary Homes are being introduced by the nation's outstanding custom builders . . . eloquent testimonial to quality and design. Here, at last, is a package home with the built-in prestige and design that quality builders, looking for lower, more firmly fixed costs, can be proud to put into their finest areas. This can be your opportunity to be the first in your community to reach this vast market of Contemporary Home buyers who are being daily pre-sold in every women's, home and consumer magazine.

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talking back to the investigating senators still more. Bertram Bonner of Richmond, who had made $1 million in 608 mortgage profits, complained it was "unfair" to criticize those who responded to urgent government appeals for housing.

Attorney McKenna gave the banking committee financial summaries of the operations of 27 groups which had constructed Sec. 608 projects—27 "horrid examples" of overfinanced apartments in the New York suburbs, Virginia and Texas. Both McKenna and Capenart charged it was common practice not to pay architects' fees allowed by FHA regulations. Thoughtful building men agreed that some 608 deals were pretty smelly. For instance, even if a 608 application was based on a proposed deal, the sponsor was probably violating the law if he put in an architect's fee of 5% if he already had signed an agreement with the architect to do the design for less.

McKenna stressed other points of more doubtful merit. Samples:

▶A study of 62 Sec. 608 cases in 11 states showed that many did not pay the prevailing wage rate as required by law on multifamily FHA projects (but not on detached homes). "The failure to pay this rate was one of the factors that resulted in mortgaging out. . . . Even if the certification that the prevailing wage rate had been paid was false, FHA took the position that it could overlook this point as long as it was filed."

▶Where the Labor Dept. forced payment of prevailing rates, FHA often raised its commitment. "The key people responsible for these abuses have been dismissed or forced to resign. These abuses could not have arisen even under the present law if it had been properly administered," said McKenna.

McKenna's technique struck some industry listeners as expert use of the three-quarter truth to imply more than the facts warranted. Actually, FHA was never given staff or instructions to administer the prevailing wage rule. All it was required to do was get a certification from builders. Most 608s were built amid a scarcity of construction labor; builders would have had to pay top rates to get them built at all. Moreover, FHA omitted from 608 regulations two clauses (both included in 207 rules) which helped make mortgage profits possible. These were: 1) a ban against liens other than the mortgage, and 2) a ban against redemption, purchase or paying off of any stock on interest in the corporation except with FHA approval. The first omission allowed corporations to get their risk funds as loans; the second allowed a close identity of the owning and building corporations, retention of funds usually paid for building services and, finally, distribution of such retained funds as a capital gain.

More data sought. Acting FHA Commissioner Norman Mason mailed a questionnaire to all mortgagors under 608, seeking four pages of information on how they financed their projects. "Pursuant to the authority vested in the commissioner," read the accompanying letter, "your firm as a Sec. 608 mortgagor is required to furnish the information called for. . . ." Some builders suggested the request was tantamount to asking them to convict themselves. Others speculated on the extent of the commissioner's authority to obtain such information. There is language in the charter of each 608 corporation which authorized the commissioner to request detailed information relevant to the project, but there is doubt as to whether this could be used as authority so long after endorsement by FHA of the contract of insurance. One 608 mortgagor addressed a letter to Mason in which he stated that members of his firm could find themselves under no obligation or compulsion to furnish the information requested and added that if they could determine some "reasonable purpose to be accomplished" by the questionnaire their attitude would be quite different. "We have read the publicity issued through the housing agency, and the newspaper reporting of the hearings before the banking and currency committee in the Senate," went the letter, "and have been greatly disturbed at the statements made implying wrong doing under the law in such general terms as to place every owner of stock in a mortgagor corporation or owner of a project subject to a mortgage insured under 608, under suspicion as having violated the provisions of the NHAct. . . . No specific statutes are cited, no detailed charges have been made of which this corporation is aware, and in particular at no time have we been advised as to the legal authority, chapter and verse, under which the FHA commissioner could properly demand or require this corporation to apply or dispose of funds from the proceeds of the mortgage."

Counterattack. Any such view as the above had not yet registered either on the senators or Mason's FHA. FHA had in fact, composed a gray list of about 70 Sec. 608 builders and told their men not to do business with them without checking first with Washington. The list was secret, but its existence had already stirred uneasiness in the industry. FHA also issued instructions to its staff to refuse to knowingly insure any rental housing under 203 without Washington approval. McKenna had charged that some 400 rental projects in disguise had sneaked in under 203, including a big one near Washington. (Advantages would be higher commitments and circumventing of the law on prevailing wage rates.) It was possible the inquiry could grow into a full review of all housing activities under the 20 years of Democratic administrations. Senator Byrd has warned against the corruptive potential of the HHFA's slum clearance program, and public housing's Sec. 213 co-ops and military housing have been mentioned. The committee planned to take the show on the road after the close of Congress and investigate the situation in New York, Cleveland, Detroit, Columbus, Chicago, Los Angeles, Baltimore, Philadelphia and Dallas.

HHFA given broad power to reorganize US housing

Congress has given HHFAdministrator Albert M. Cole sweeping power to reorganize his stable of housing agencies. The authority was slipped in as a rider on the Independent Offices appropriation bill—a maneuver that took by surprise the industry men who were primed to try to block such a move. Before protests could be lodged, the bill was on President Eisenhower's desk and signed into law.

The amendment, inserted by Rep. John Phillips (R, Calif.), provides that the HHFA chief's "general supervision and coordination responsibilities under reorganization plan No. 3 of 1947, shall hereafter carry full authority to assign and reassign functions, including the reallocation and transfer of administrative expense funds and authority where applicable, necessary to promote economy, efficiency and fidelity in the operations of HHFA." Stripped of legal jargon, that meant Cole can now assume dictatorial control over policies, activities and personnel of FHA, the Home Loan Bank Board, PHA and Fanny May.

Homebuilders and mortgage bankers were unhappy over the development. The two savings and loan leagues were particularly concerned over what they saw as a threat to the independence of the Home Loan Bank Board. Cole, however, indicated he planned to go slow in using his new authority, would probably use it mostly to continue the shake-up of FHA.

Giving the HHFA chief command control instead of merely "coordination and supervision" over his constituent agencies has been a pet aim of the House appropriations committee for several years. Last year, the committee stuck similar wording into the independent offices appropriation bill. At that time, FHA Commissioner Guy Hollyday opposed it strenuously and Cole, noting that a presidential committee would soon be restudying the organization of federal housing agencies, also suggested such a move would be premature. This year he did not object.

FHA reorganization sets stage for 18 new top jobs

FHA shook up its top-level administrative organization, creating four new assistant commissioner jobs in place of all the old ones. The shuffle cleared the way for FHA to use 18 new top-bracket jobs (with pay of $12,000 to $12,800) to be set up in the 1954 Housing Act. With these, Acting Commissioner Mason hoped to have better luck wooing outside talent into the scandal-shaken agency. So far, efforts have been cramped by low pay. A new assistant commissioner for technical standards (probably Charles A. Bowser) will head up separate divisions of architectural standards and appraisal-mortgage risk. Thus, FHA technical service will be divorced from domination by underwriting—a move long advocated by the building industry and congressional FHA critics. Other assistant commissioners will handle administration, programs, operations.

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NuTone Ventilating Fans in NAHB Air Conditioned Village*

11 out of 22 fan installations in Austin, Texas* are NUTONE

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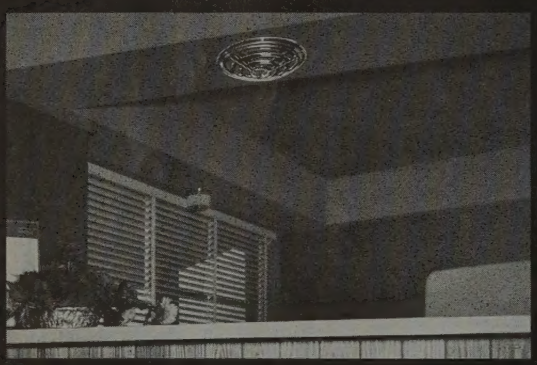
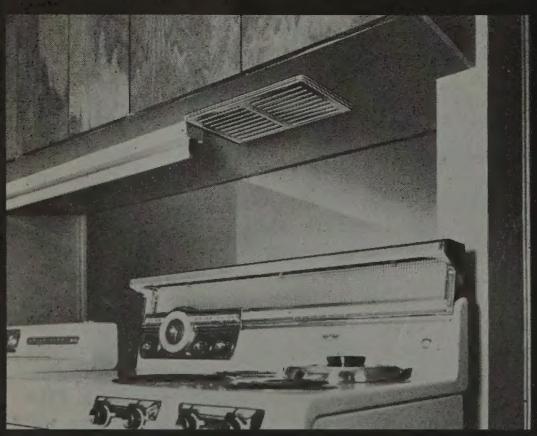


Austin Air Conditioned Home #11, built by Frank Barron, includes a NuTone 829 Ceiling Ventilating Fan in center of the kitchen.



Builder W. A. Burns (Home #15) chooses a NuTone 870 Twin Blower for kitchen . . . and also a NuTone Ventilating Fan for Bathroom.

NAHB Air Conditioned Homes #6 and #12, built by B. N. Holman, are both equipped with NuTone Model 821 Ceiling Ventilating Fans in the Kitchens.

NEW FELLOWS: at AIA's annual dinner, 21 architects were advanced to the honorary rank of fellow including (l to r) Dean William W. Wurster of the University of California school of architecture, Royal Barry Wills of Boston and Ludwig Mies van der Rohe of Illinois Institute of Technology.

Nicholas B. Bean

TWO MILLION STARTS a year by 1964 were predicted by Paul B. Wishart (l) addressing annual dinner. At right, AIA President Ditchy.

Julius Shulman

DESIGN SYMPOSIUM speakers whose talks packed an auditorium were (l to r): Paul Rudolph, Jose Luis Sert, Eero Saarinen and Ralph Walker. Asked Saarinen: "Have we gone overboard on too big windows, creating too many thermo-problems? Does the flat roof . . . really answer all problems?"

HONOR AWARD HOUSE, in Ojai, Calif. was cited for its "beautiful play of light and shade, the handling of materials and textures."

Expanding housing markets predicted at architects' convention

The nation's architects—who design very few of the nation's new homes but would like to do more—have been told that the pace of homebuilding seems likely to shoot up even faster than optimists were predicting a few years back.

The forecasts of expanding housing markets were made by leading speakers at AIA's 86th annual convention June 15-19 in Boston.

Predicted President Paul B. Wishart of Minneapolis-Honeywell Regulator Co.: "The force that will do more than any other to expand the American economy in the next ten years is the emerging sales appeal of a new home that will be more irresistible than the legendary sales appeal of the new American automobile. . . . Housing is coming down in cost; it is incorporating conspicuous engineering advances, year by year. The techniques of selling and of mass financing are being perfected.

"I confidently expect to see starts in the years to come range far above the million-per-year level. . . . By 1964 this fascination of the American people for what they can get in a new home more than they have in the old, will have pushed starts above 2 million a year. . . . The American people are really just beginning to realize that there is more fun and more satisfaction in having a new home, with all its advances, than in having a new car parked in front of the old home."

'54 outlook improves. Short-term optimism was in evidence at an AIA-Producers Council session that found the construction outlook for the rest of this year better than previously anticipated. Watson Malone, vice president of the National Retail Lumber Dealers' Assn., reported that a majority of retail lumbermen now expect their 1954 business to exceed last year's. Last December 40% expected a decline and only 13% foresaw a bigger year. Principal reason for revised views: the spring upturn in private homebuilding. In confirmation, Vice President R. S. Hammond of Johns-Manville Sales Corp. reported J-M sales for the first 1954 quarter were within 1% of 1953's first quarter, and after an April and May upsurge sales for five months had topped expectations.

Cookie tins and nudity. Most popular convention talks were those of: 1) Editor Edward A. Weeks of *The Atlantic Monthly,* who noted that a vast volume of new houses and community facilities would be required by the "inescapable, cheerful fact" that the nation's population is increasing so fast, and 2) a panel on "The Changing Philosophy of Architecture" addressed by Architects Eero Saarinen, Jose Luis Sert, Paul Rudolph, William W. Wurster and Ralph Walker. Weeks contrasted the "cookie tin" school of American architects 30 years ago with today's modernity. Said he: "At the time I speak of—1924—architecture, as seen by a bookman, was a very tasty profession. . . . and it didn't make the slightest difference how often you plagiarized the dead. Every architect had a set of cookie tins. If he was asked to do a public building, a bank, or a city hall, he used his largest cookie tin and turned out something that looked like a badly swollen Greek temple. If he was to do a town house for a Vanderbilt, he used the French chateau cookie tin; for the moderately rich he made cookies Southern style, or beam and plaster Elizabethan, and for the little people he . . . turned out a copy of a Cape Cod cottage. . . ."

Today's design, as Editor Weeks saw it, has become "more respectful of climate and location," while "fenestration, under the stimulus of Frank Lloyd Wright and Libby-Owens-Ford, has opened up the private dwelling. . . . The danger . . . is no longer the danger of cookie tins, but the danger of novelty and nudity; the danger of omitting essentials—bookshelves, for instance; the danger of creating an interior so bare it hurts; the danger of bringing so much of the outdoors inside that man's ancient need for coziness and shelter is left unsatisfied. . . ."

Chaos in the suburbs? Panelist Rudolph, who devoted much attention to criticizing the relation of city buildings to each other

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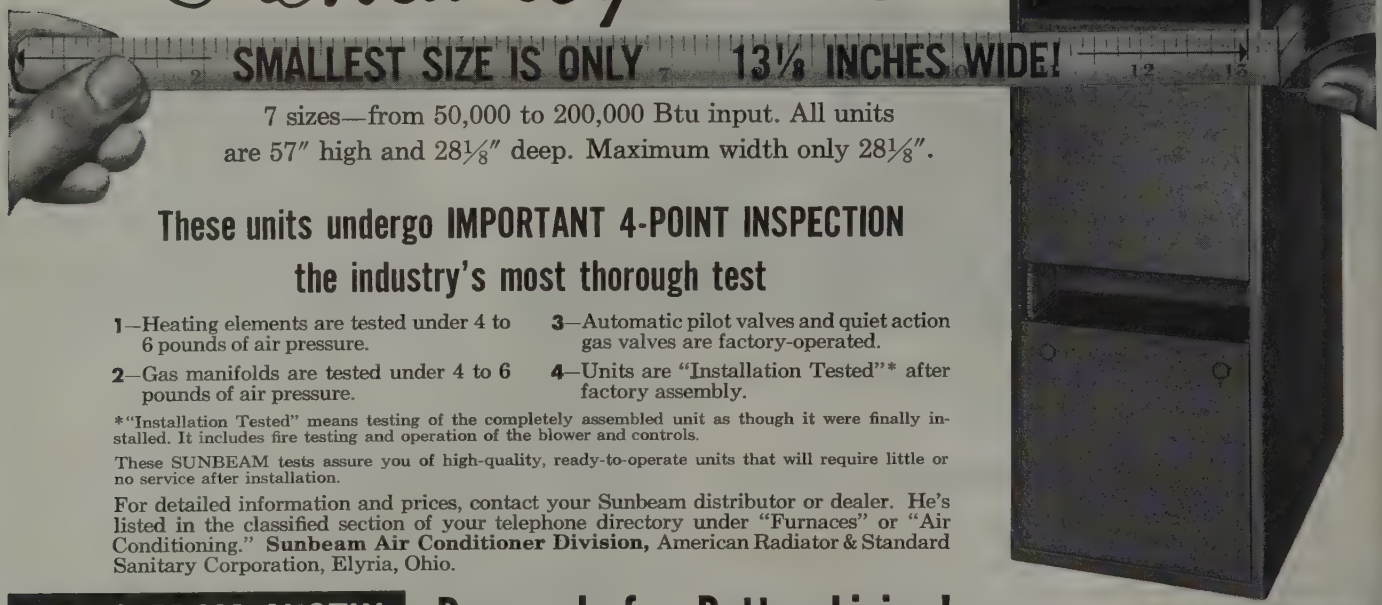
SUNBEAM quality . . . competitively priced factory assembled and Installation Tested*

The New Wyandotte



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7 sizes—from 50,000 to 200,000 Btu input. All units are 57″ high and 28⅛″ deep. Maximum width only 28⅛″.

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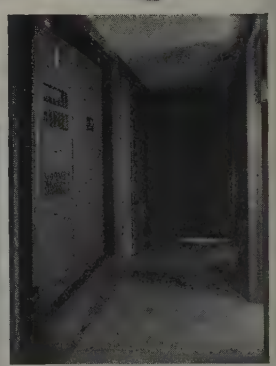
MR. FRANK C. BARRON, Austin, is the builder of the *American-Standard Sunbeam* home.

THIS AIR-CONDITIONED HOME, featuring a large kitchen-dining-activity area, was designed for informal living. Eugene Wukasch, architect-engineer; Thomas Hainze, associate.



SUNBEAM HEATING and cooling units are located in hall utility room.

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("The alignment of building alongside our endless streets suggests large rolls of wallpaper pasted on"), called for a restudy of setback restrictions in suburban housing developments. "The no man's land between single-family houses caused by our setback rulings has no meaning whatsoever," he said. "The individual house has received tremendous attention but its relationship to its neighbors and forming coherent and usable outer spaces is almost completely neglected. . . . No society has ever before worked under such stupid restrictions. We plant our orchards more intelligently than our houses."

On the practical level, the convention considered a resolution from the Brooklyn chapter that would have condemned the sale of stock plans for private dwellings as "contrary to the objectives of the AIA," would have instructed AIA directors to "take all necessary steps to eliminate the practice."

In floor debate, opponents said such a resolution would interfere seriously with the increasing cooperation between many AIA members and operative builders and would impede the progress being achieved by the joint AIA-NAHB committee on architecture. On a voice vote it was defeated decisively.

Honors list. Of six institute Honor Awards announced at the convention, only one was for a house—the James D. Moore residence in Ojai, Calif. (photo, p. 41) by Architect Richard J. Neutra in collaboration with Dion Neutra (H&H, Aug. '52). The 32 awards of Merit included:

Techbuilt House by Architect Carl Koch of Cambridge, Mass., cited as the Best Development House (H&H, Feb. '54).

Blue Ribbon Tract, Northridge, Calif. by Smith & Williams of Los Angeles, architects, erected by Blue Ribbon Construction Co. (H&H, April '54).

Sunshine Meadows, in Sunnydale (H&H, June '54), and Sunshine Glen, in Palo Alto, Calif. by Anshen & Allen of San Francisco, architects, erected by Mackay & Associates.

Hollin Hills, Va. houses by Charles M. Goodman Associates of Washington, architects, erected by Robert C. Davenport (H&H, Jan. '54).

J. J. Pike residence, Los Angeles, George Vernon Russell, architect.

Business affairs. The convention adopted a completely revised code of ethics for the institute. Biggest revision: elimination of the mandatory rule that "an architect shall not guarantee any estimate of construction cost." Mandatory rule No. 2 also was completely reworded. It no longer specifically forbids "free sketches," but now says an (AIA) architect "shall neither offer nor provide preliminary services on a conditional basis prior to definite agreement with the client that if the contemplated project proceeds, he will be employed as its architect."

President Clair W. Ditchy of Detroit was re-elected for a second (customary) term by a more than 2-to-1 margin over Chicago's John W. Root, who had waged little campaign for the job. Leon Chatelain Jr. of Washington, D. C. defeated Edward L. Wilson of Fort Worth for treasurer. He will succeed Maurice J. Sullivan of Houston.

SIDELIGHTS

Military housing

After three attempts to provide military housing by other means, the House armed services committee last month was studying a scheme calling for direct government appropriations to build about 13,000 units of family quarters in the US and abroad. Probable cost: around $170 million. The committee claims the Wherry Act returns builders $50,000 in rent for each $8,100 unit, wants no more Wherry housing built.

Build it yourself

How widespread is the build-it-yourself trend? Georgia-Pacific Plywood Co. surveyed 9,000 home owners across the nation and came up last month with this answer: 67% of Americans whose homes are valued from $10,000 to $25,000 are engaging in build-it-themselves additions or improvements. Commented President Owen R. Cheatham: "We believe more strongly than ever that the do-it-yourself trend will continue to grow rapidly, enlarging the market potential not only for numerous materials, but for tools, work clothing and innumerable other products."

Toward better house design

Efforts to bring more architects and builders together in planning subdivisions received a significant boost from Allied Building Credits, Inc., a Transamerica subsidiary which finances light construction nationwide through 35 field offices. Allied now requires its field managers to urge builders to use architects in planning tract houses. If they do not, the builders' plans must be reviewed by approved architects before financing will be considered. Allied services about $75 million in mortgages.

Air-conditioned public housing

Air-conditioning units raised temperatures in Omaha last month. Executive Manager Edward Ouren of the Omaha Housing Authority reported that four or five window air conditioners had been installed by public housing tenants. He suggested the authority limit the practice to avoid overloading the wiring. Chairman Ephraim Marks exploded: "Isn't this ridiculous? Here we are, running low-cost housing for needy people and some of them have air conditioners and TV sets!" Two other board members saw nothing wrong. "A man's home is his castle," said Member John Larkin Sr. "I don't believe in pushing tenants around."

Streamlined VA procedures

VA offices across the nation, swamped with zooming totals of applications, were told to cut the time lag between the request and the actual appraisal of existing homes to three days. Many offices were adopting a suggested telephone appraisal system to cut processing time. The lender phones VA after earnest money and a firm loan commitment have been made; VA searches its records for a previous recent appraisal; if there is none, it calls a fee appraiser who must phone his report immediately and file the written report later; VA phones the lender within the three-day limit and the deal can be closed at once. The service must be requested by the lender or veteran; it is not available to builders or brokers.

Out of compassion for the builders who must wade through pounds of VA technical bulletins and pages of VA regulations before filing for a certificate of reasonable value, the New Jersey VA has issued a simplified 14-page check list of VA requirements. With this in hand, the builder knows just what exhibits, financial statements, plot plans, specifications and other data (and how many copies of each) he is expected to file. Thus his application need not be held up while he scurries about supplying missing documents. Other VA offices have used other channels to indoctrinate builders with VA jargon and methods (e.g. lantern-slide presentation in Detroit, conferences with industry groups in other cities).

Public housing high finance

As the old fiscal year ended, public housers crowed happily that the Public Housing Administration had repaid the US Treasury $455 million borrowed by PHA to finance local housing authorities. Congress last year directed PHA to refinance the outstanding loans. The repayments reduced the federal debt, at least for the moment. But there was a catch in it.

What happened was that local authorities, taking advantage of falling interest rates, refunded direct Treasury loans with tax-free, fully government-guaranteed bonds. The bulk of the principal and interest on the bonds is paid by the US as annual contributions to local public housing agencies. These subsidies, plus loss of income tax revenue from the income of tax-free bonds—said fiscal experts—will probably cost the government and taxpayers more in the long run.

Home ownership: going up

The Federal Reserve Board, reporting on its annual survey of consumer finances, revealed a meaningful increase in US home ownership: "About 56% of all nonfarm families owned their own homes in early 1954 compared with 51% in 1950." The Fed also noted a "striking" increase in home ownership among World War II veterans, who now own their homes "about as frequently as other families." Another statistic underlined the mobility of mid-century America: "more than one third of all home owners had occupied their homes for less than five years." And 15% of home owners had lived in their houses less than two years.

HOUSING STATISTICS:

BLS revamps housing starts series; $1.4 million asked to improve other building figures

BLS last month completed a big overhaul of its monthly measure of the nation's housing activity, housing starts. The housing series has been revamped periodically since BLS published its first city building construction report in 1921, most recently in 1946-47. Changes fall into three categories:

1. BLS will now have virtually universal coverage of all local building permit systems (6,800 localities instead of 4,500).

2. The sample in nonpermit areas will be based on 1950 rather than 1940 census data. With expanded coverage in permit areas, the nonpermit slice of housing will be cut from 25 to 15% of each month's starts total.

3. Adjustments stemming from its regularly scheduled studies of permit use will be made. From these, BLS statisticians divine how soon after issuance permits are actually used, and how many are allowed to lapse without being used. As an added bonus, the bureau will now issue both regional statistics and data comparing homebuilding in metropolitan areas with that in nonmetropolitan areas.

The new series began with the June reading, which was delayed by the change-over and was too late for this issue. BLS said the new figures will be "continuous" with the old ones.

The big money. The revamped method for determining starts was made possible by an appropriation of $95,000—a drop in the bucket compared to the request for more than $1.1 million put before Congress for improved and amplified information on other aspects of the construction industry. Renewed criticism of the government's present fact-gathering setup—plus urging from the White House—forced Budget Director Rowland Hughes last month to reconsider his initial rejection of the request (H&H, July '54, News). As a result, the administration asked $110,000 for BLS, which the agency said would be used for three types of statistics gathering: 1) modernization of the bureau's obsolete system of estimating labor requirements for construction—important in evaluating public works programs, 2) an annual survey of residential builders, especially as regards the number of firms, their relative size and their methods of operation and financing, 3) information on expenditures by the federal government for alterations and repairs. The Commerce Dept. (with $1 million share of the appropriation) would: 1) make quarterly surveys of alteration and repair expenditures in other types of construction, 2) improve its national and regional estimates of new construction expenditures, 3) revise its building materials' production index, adding nine materials, 4) begin semi-annual surveys of housing vacancy rates in 15 major metropolitan areas, and 5) analyze the amounts of materials required in construction of different types of buildings.

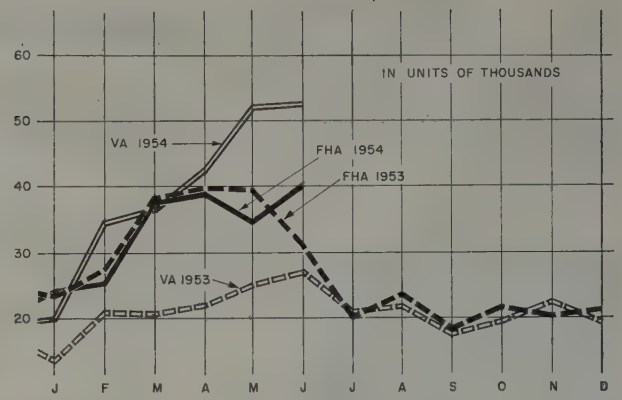
MORTGAGE LENDING ACTIVITY

(Investments in millions of dollars in nonfarm mortgages of $20,000 or less by various types of lenders)

1953	S&L assns.	Ins. cos.	Comm. banks	Mutual savings banks	All others	TOTAL
January	476	111	278	92	441	1,400
February	503	109	268	84	424	1,391
March	605	126	316	92	488	1,627
April	642	127	325	102	512	1,709
May	641	133	317	111	496	1,699
Total	2,867	606	1,504	481	2,361	7,826
1954						
January	467	108	263	85	449	1,372
February	517	105	274	85	444	1,425
March	666	124	335	103	556	1,784
April	668	130	333	112	550	1,793
May	675	123	330	118	558	1,804
Total	2,993	590	1,535	503	2,557	8,178
Change 5 months 1953 to 54	+4.4%	—2.6%	+2.1%	+4.6%	+8.3%	+4.5%

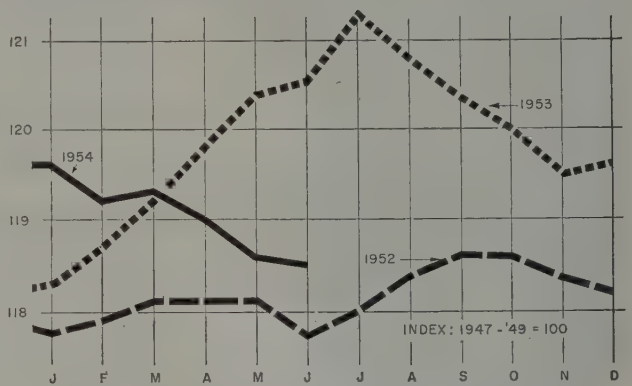
Source: Federal Home Loan Bank Board

FHA AND VA APPLICATIONS



VA appraisal requests for proposed homes totaled 52,749 in June. Though only 504 units ahead of May, June was a four-year high. Like April and May before it, June was the highest since the pre-Reg. X stampede of Oct. '50. FHA applications for June totaled 40,474, up from May's 34,715 units.

BUILDING MATERIALS PRICES



Wholesale building materials prices as indexed by BLS slipped one-tenth of a point to 118.5 in June from a revised May figure of 118.6 (early May estimate: 118.7). Base years: 1947-49. E. H. Boeckh & Associates' index of residential building costs rose one point in May to 250.4 (1926-29 equals 100).

MORTGAGE MARKET QUOTATIONS

(Originations quoted at net cost, secondary market sales quoted with servicing by seller)
As reported to House & Home *the week ending July 9*

City	FHA 4½'s Originations	FHA 4½'s Secondary	5% equity or more VA 4½'s Originations	5% equity or more VA 4½'s Secondary	No down payment VA 4½'s Originations	No down payment VA 4½'s Secondary
Boston: local	par-101	a	par-101	a	par-101	a
Out-of-state	a	99-par	a	99½-par	a	97½-99
Chicago	97-99	99-par	97-99	99-par	a	a
Denver	99-par	99-par	99-par	99-par	99-par	99-par
Detroit	97½-99	a	97½-99	a	97	a
Houston	par	par	99½-par	99½-par	98-99½	98-99½
Jacksonville†	par	par	par	par	98-99	98-99
Kansas City	98-par	par	97-99	par	96-98	97-99
Los Angeles	99-99½	99-99½	98-98½	98-98½	97½	97½
New York	par	par	par	par	par	par
Philadelphia	par	par	par	par	par	par
Portland, Ore.*	par	par	par	par	99	99
San Francisco	par	par	par	par	97-99	97-99
Washington, D.C.	par	par	par	par	99-par	98½-par

a No market.

*Probable prices throughout Pacific Northwest. † Probable prices throughout Florida.

SOURCES: Boston, Robert M. Morgan, vice pres., Boston Five Cents Savings Bank; Chicago, Maurice A. Pollak, vice pres. & secy., Draper & Kramer Inc.; Denver, C. A. Bacon, vice pres., Mortgage Investments Co.; Detroit, Robert H. Pease, pres., Detroit Mortgage & Realty Co.; Houston, John F. Austin Jr., pres., T. J. Bettes Co.; Jacksonville, John D. Yates, vice pres., Stockton, Whatley, Davin & Co.; Kansas City, Byron T. Shutz, pres., Herbert V. Jones & Co.; Los Angeles, John D Engle, pres., Insurance Funds Mortgage Co.; New York, John Halperin, pres., J. Halperin & Co.; Philadelphia, W. A. Clarke, pres., W. A. Clarke Mortgage Co.; Portland, Franklin W. White, pres., Securities, Inc.; San Francisco, William A. Marcus, senior vice pres., American Trust Co.; Washington, D.C., George W. De Franceaux, pres., Fredrick W. Berens, Inc.

H&H staff photo

AT LINCOLN VILLAGE: CAPE CODS RUB GABLES WITH MODERN, RANCH STYLES

BUILDERS AT WORK:

Succotash and salt boxes

Lincoln Village, the **Farm Bureau Mutual Automobile Insurance Co.'s** town abuilding on 1,170 acres of rolling Ohio farmland outside Columbus, is to be a city planned from scratch. To give people what they want ("colonial to contemporary") **Peoples Development Co.,** the insurance company's subsidiary building the town, is offering 14 different models, almost as many architectural styles. Result: a mish-mash of design that lacks architectural coherence.

"With few exceptions," says **Carl R. Frye,** vice president and general manager of PDC, "American cities of today are made-over relics of another day. The nucleus . . . is a deteriorated core. In Lincoln Village we [were able to] start with fresh seed. We feel the fruit of our effort will be a community truly planned from birth." Frye's "fresh seed" includes Williamsburg colonials, New England salt boxes, expansion-attic Cape Cods, two-story colonials sprinkled among (and often cheek to cheek with) low-slung ranchers and good-looking contemporaries. Example (cut, above): a good-looking low-pitched contemporary tucked between a high-peaked Cape Cod and a 5″ in 12″ pitched rancher. Frye says his chief object is to give buyers complete freedom of choice, avoid a "peas in a pod" look. The danger: the homely hodgepodge of a variety store.

Eventually Lincoln Village will have a minimum of 1,000 single dwellings, 400 rental units. Price range on the sale houses: from $12,250 to $20,000. Rents: from $80 to $95 per month. Houses under $15,000 and with basements sell fastest, reports **John W. Galbreath & Co.,** handling sales. Although 15 of the first 20 were sold basementless, Frye plans basements for 50% of the next 150. By year end Lincoln Village will have about 220 houses completed. Next spring: the first unit of a shopping center by Architects **Gamble, Pownall & Gilroy** of Ft. Lauderdale, Fla. Site planning and zoning of industry in Lincoln Village are excellent. With geography and a huge labor pool in its favor, it needs only design integration to become a model city.

Interstate builders

Designer-Builders **Cliff May** and **Chris Choate,** continuing their expansion from California into other states, signed a ten year contract with Builder **H. Leslie Hill** of Dallas to manufacture and distribute Cliff May Homes in Texas. Hill planned 2,000 houses the first year in Dallas, Ft. Worth, San Antonio, Austin and Houston. **Briggs Manufacturing Co.** of Tacoma was under way with 1,000 homes for Washington, Oregon and Idaho, and **Burns Construction of Nevada** (Builders **Franklin Burns, Mark Bogue,** *et al*) signed a deal with a **Ranch House Supply Corp.** (May's California distributor) for 500 homes at Las Vegas.

15,000-home subdivision

Millionaire Houston Homebuilder **Frank W. Sharp,** who went into the building business in 1936 with $150 capital, announced plans for a $200 million subdivision of 15,000 homes on Houston's prairie outskirts—one of the nation's largest (Levittown, L. I. has 17,500). Sharp said the 4,000 acre development (the land cost $6 million) will "probably take ten years to complete. Construction of the first 1,000 three-bedroom, brick veneer homes (all priced about $12,000) was to start Nov. 1. The project will also have shopping centers, parks, offices, two country clubs and sites for six grade schools, a junior and a senior high, and six churches.

SHARP

Sharp, who is 48, recalls: "I lost $1,400 on my first project, a big four-unit apartment. But I got the right experience out of it." He lined up more backing, dived back into building with the comment: "This time I'll know what the costs are." He has known enough about costs since to handle some 8,723 homes, building about half himself, selling other builders the land for the rest. His biggest development: 6,500-home Oak Forest addition. His new tract, though treeless, adjoins some of the best medium-priced residences in Houston. Says Sharp: "You know, every man working in an office wants to live in the part of town his boss lives in. This is it."

ALBUQUERQUE PROJECT WITH PAINTED TREES

NEWS

Split-level for $5.75 sq. ft.

The ubiquitous split-level turned up last month in table-flat Florida as a bargain-priced top seller. A former New York building firm, **C & N Construction Co. (S. A. Rizzo,** president; **Joseph B. Prussiani,** designer-engineer) has been selling a conventional split-level home for $11,900, or about $9.75 sq. ft. For its latest model (cut, below), instead of filling the space under the upper level, C&N dug out a semibasement which added 700 sq. ft. to the house, threw in a roofed-over patio of another 200 sq. ft. For the 2,100 sq. ft. of space under roof, the price tag was $12,300, or $5.75 per sq. ft. In a month, C&N sold

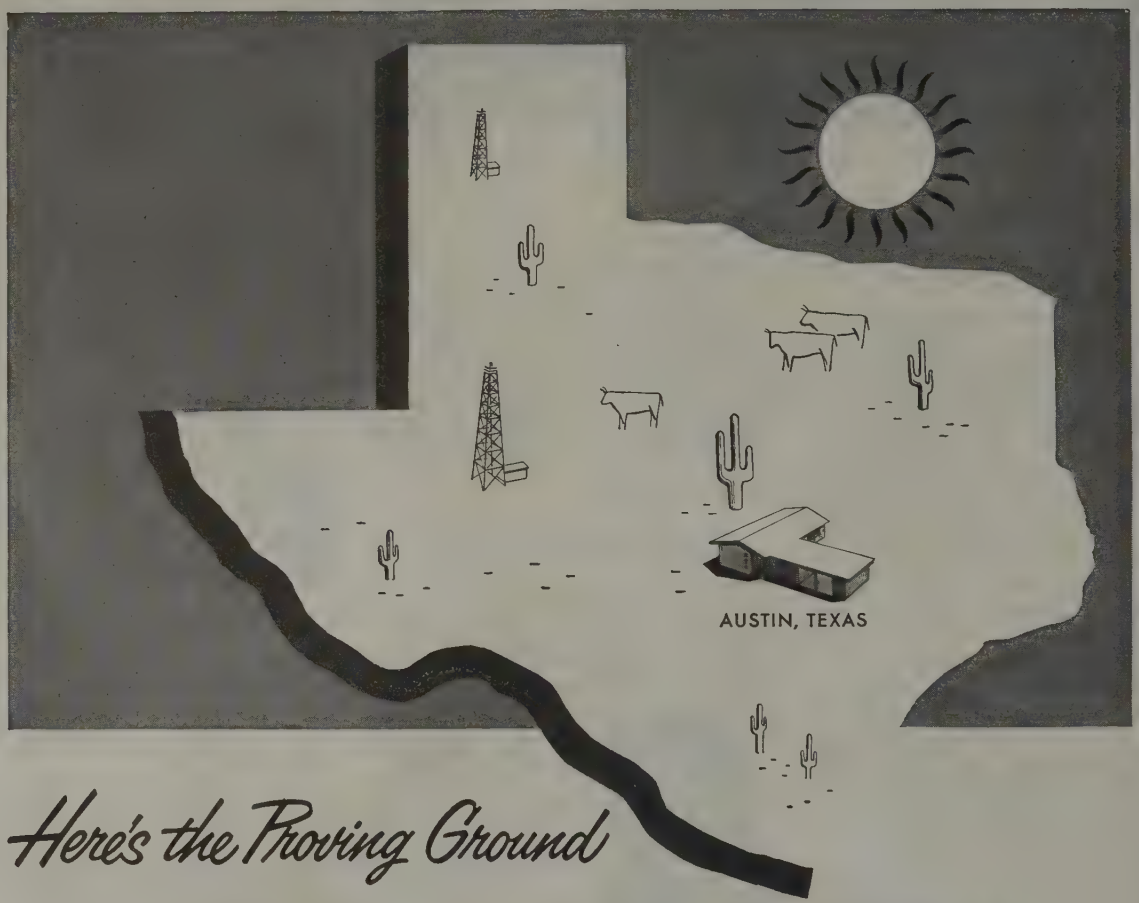
Bert Henry

LOW-PRICED SPLIT-LEVEL IN FLORIDA

225 (with nothing down, not even closing costs, to veterans, but requiring $2,988 down from others). Miami realty experts called it the largest mass-produced home ever offered in southeast Florida.

Pumice and painted trees

Dale Bellamah of Albuquerque had such success with modern-design homes built of a locally produced pumice aggregate mixture with color added that he decided to branch out into an extra 327 acres. Last winter he looked into the new material, picked a block 8″ x 4″ x 16″ (to meet FHA and VA requirements) and gave customers a choice of six colors, including natural. In two weeks, he sold 90% of the first 79 houses planned. His most popular model was a three-bedroom house (980 sq. ft.) with butterfly roof for $9,250 (see cut, left). A two-bedroom model was priced at $8,100 and a four-bedroomer at $10,450. To step up interest in his first test model project, Bellamah brought in some trees from the edge of the Rio Grande, transplanted them in the sun-baked soil of New Mexico and spray-gunned them with green paint for the opening. He also fashioned "lawn" of crushed pumice and turned it green with the same dye process used in the pumice aggregate—a system since adopted by many builders in the area. (The painted trees, incidentally, are now thriving on their own.) Bellamah, going ahead with the 327-acre subdivision containing 1,600 building sites, will offer six models, three of the colored pumice and three of stucco. He has added a sunken living room to the popular three-bedroom model. He will also give the project two tennis courts and a swimming pool, the latter he believes to be the first ever offered in a subdivision in the state. Trees? Bellamah will import 300 more and make a park.



Here's the Proving Ground

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Now at the NAHB Air-Conditioned Village project at Austin, Texas, they will test *Thermopane* and Heat Absorbing Plate Glass. They will measure their effectiveness where it counts most . . . in actual homes, helping people enjoy the comfort and healthful benefits of air conditioning at costs they can afford.

Libbey·Owens·Ford is glad to participate in this down-to-earth research project. It will provide information valuable to you in designing houses for air conditioning and equipping them for maximum comfort and economy.

The abundant use of glass in homes today makes it vital that you choose the *kind* of glass with care. Now, air conditioning makes proper glazing doubly important for comfort and year-round economy. Libbey·Owens·Ford Glass Company, 608 Madison Ave., Toledo 3, Ohio. *

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Associated Photographers

VISITORS CROWD EXHIBIT OF US STEEL HOMES' NEW "WESTERNER" IN PITTSBURGH

Three Colorado subdivisions

Picking Denver as the "outstanding city of the West" in terms of growth potential, **Del Webb,** ball-club owner and big Phoenix contractor, announced plans for a $100-million suburban community 4½ mi. north of the city limits on 2,000 acres of high ground. Commuting time to downtown Denver: 12 minutes by car. Families who occupy the proposed 6,000 three- and four-bedroom homes will have their own schools, parks and shopping centers and a view of the Rockies. Webb said he had examined every city in the West before he settled on Denver, made up his mind before he heard that the air academy would be located near Colorado Springs. The project will lie only 2 mi. west of embryonic Thornton, Col., a 5,000-home community now being built by **Sam Hoffman,** and will be near the atomic plant at Rocky Flats and the college town of Boulder. Hoffman, incidentally, won FHA approval for *his* project only last month when Washington overruled the local FHA office after a year's argument over whether Thornton had enough water, sewage, transportation, schools and shopping facilities. Webb's project is the third he has embarked on with the Aldon Construction Co. of Los Angeles (**Donald Metz,** president) and dwarfs the other two—the $20-million copper mining city of San Manuel in Arizona and a $30-million defense housing project outside San Diego. The same week, Denver Builder **Olle S. Forsberg** (Westcraft Homes) announced he was going to begin an 8,000-home city on a 2,300-acre tract of foothills west of Denver's federal center. Initially, he would build only 75 homes (two and three bedrooms with carport-type patio-porches) to sell for $10,000 and $11,000.

New prefab by Stubbins

The **E. F. Hodgson Co.** of Dover, Mass., a prefab company that has been producing parts for a variety of conventional models for 60 years, branched out with a six-room contemporary home designed by Architect **Hugh Stubbins** of Lexington, Mass. A test model of the L-shaped, low-roofed structure has been put up in Schenectady (see cut) under auspices of the **General Electric Co.,** which has wired it for everything from food freezers to a 46-switch remote-control lighting system. Stubbins squeezed three bedrooms and a bath into the wing of the 1,400 sq. ft. house and divided the main part into combined dining and family space, kitchen and living room. A garage is attached.

ELECTRIFIED PREFAB BY HUGH STUBBINS

US Steel's six-room prefab

US Steel Homes, Inc. spared nothing in launching its newest creation. An estimated 15 million television viewers saw the full-size interior of the new "Westerner" set up in a New York studio. A few days later 15,000 citizens of Pittsburgh saw the house in the flesh (see cut). The new model is 40′ x 24′ and contains six rooms. It was adapted from an original design by **Arthur Guyon** of San Antonio and will cost about $12,500. The exterior of cedar shingles comes in any two of eight complementary colors; the interior is washable wood paneling in natural finish, contrasting with built-in furniture (except in the living room) of Philippine mahogany.

Pulse of the market

Washington Builder **Eddie Carr** expects to build about 1,000 houses on a 300-acre-plus site he has, with the first models up early this month. They will sell in the $12,000 to $15,000 bracket. **Harry Ormston** is the architect. . . . **Edward Rose & Sons,** big-volume (950 houses in 1953) Detroit builders, reached into Dayton and picked up acreage for 100 houses. The company sold 75 the first week end of operation and the rest a few days later, started working on a verbal option it had to buy adjoining land for 412 more. The house is a three-bedroom ranch model, with full basement, for $12,795. . . . Denver Builder **Lou Carey** has switched to a modern house, designed for him by **Baume & Polivnick.** He named a couple of reasons for the switch: there is just so much that can be done with conventional construction for $12,000 and, with competition what it is, something new has to be added. . . . **Harold Smith** of Arlington, Tex. (near Dallas) is building four-bedroom, two-bath houses for under $10,000 and a three-bedroom, 1½-bath home for $8,600, designed by **W. E. Richardson.** He has started 20, sold all of them from plans, and scheduled 147. . . . **R. L. Pine** of Dayton, who calls minority housing a "wonderful untapped market," is building **Pease** and **Wheatley** prefabs for minority groups there. Two insurance companies were arguing over the mortgage paper and, last month, were offering 98 while Pine held out for par. . . . **Alan Brockbank** of Salt Lake City, former NAHB president, reports he recently sold 45 houses, has 34 under construction and plans 132 more. The secret of his new house, he says, was to analyze everything he had been doing with the prefab package he had been using and find out how to do it cheaper. The new house has a brick exterior and storage walls. Houses did not sell well at a little over $11,000, but are moving at $9,950. Brockbank's model has 1,121 sq. ft. and a carport and is built on crawl space. It has perimeter heat and does not make use of the storage walls in the prefab package. . . . **A. Robert Rolde** of Boston will complete 70 Sec. 207 units by Oct. 1. He says they are the only true garden-type apartments in the area. His architect is **Ralph Williams.** . . . Topeka Builder **Jack Sargent** is expanding into Lawrence, Kan., will be in Manhattan, Kan. soon and is thinking about pushing out of state.

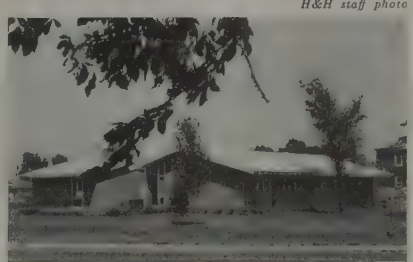
Onward and upward

Larry Winn of Big Builders Rau-Winn in Kansas City reports 85 houses sold in the last three months. The company offers a two-bedroom model with expansion attic for $10,600 and a three-bedroomer for $10,720. Winn wants to try for half again as much house for about the same price—four bedrooms and two baths for $10,000. . . . **Willard Garvey** of Wichita has already built as many homes this year as he did last (150), expects to finish up with 250. He says his first six months have ranked with the best in any year past. "If anything," he said, "I am a little apprehensive because things are going so smoothly." . . . **Tom Poore** of Midwest City, Okla. will double last year's output—up to 125 houses—says people are not buying foundations any more but that "things look awfully good this year."

J. C. Nichols goes contemporary

Turning to contemporary after years of traditional design is Kansas City's **J. C. Nichols Co.,** whose new ideas are indicated in a two-bedroom, 1,532 sq. ft. model house developed in cooperation with *Living for Young Homemakers* magazine (see cut, below). Built in one of Nichols' local subdivisions, the house is priced at $25,950; it will be shop-fabricated and sub-assembled by the **Wadsworth Co.** which expects to build and show it in other parts of the country. **E. S. Elswood & Associates** designed it with **George Tsuruoka,** AIA as associate.

H&H staff photo



KANSAS CITY MODERN BY J. C. NICHOLS

PEOPLE: Ernest Born wins California AIA honor award; John Lloyd Wright faces registration court test

First annual "award of high honor" of the northern California AIA went to Architect **Ernest Born** at a dinner in Berkeley honoring University of California architectural students. Given particularly for his work as a member of the San Francisco art commission, the award cited Born's "brilliant and selfless service to his community and his profession in advancing the cause of city planning, architecture and the arts." Making the presentation, Harold L. Zellerbach, paper executive and former art commission chairman, praised Born as "a modest man who cared more for beauty than success—and who believed so thoroughly in the importance of beauty that his was a determined fight to make it part of our everyday lives. . . ."

T. Lark

BORN

After several years of sparring, **John Lloyd Wright** and California's board of architectural examiners have come to grips in a court test which may have as a by-product result the revision—or at least a careful re-examination—of California's licensing procedures for architects. Wright, 62-year-old son of **Frank Lloyd Wright,** has been charged with four misdemeanor violations of the California business and professional code.

Specifically, John Wright was charged with displaying a sign indicating he is an architect, although he has not been licensed in California (he is licensed in Indiana, Nevada and Texas); with failing to notify a client that he was not licensed; with practicing civil engineering without a license, and with designing a structure which the examining board contends requires a civil engineer. It was the second complaint against Wright over the same building. The first, relating to the civil engineering requirements of the code, was thrown out (because the charges were too vague) by a court at Oceanside, Calif., where Wright last year designed a clothing store for **Salvadore Villasenor.** (Wright also contended the engineers' and architects' licensing acts were unconstitutional, but the judge did not rule on that.) The state board of civil and professional engineers was willing to let the case drop, but the board of architectural examiners decided to press the issue. It filed an amended complaint in Oceanside.

Points of contention are whether or not the 25′ x 100′ clothing store is two stories and a basement (requiring a civil engineer, according to the code) or whether a mezzanine (Wright's claim) means it is only a one-story structure exempt from the code; whether Wright's use of "AIA" after his name on the sign in front of his office (he is a member of AIA's Indiana chapter) indicates a claim by him that he is an architect; whether or not he notified Villasenor he was not accredited as an architect in California. California law requires a civil engineer for buildings (except houses or multiple dwellings up to two stories) with more than 25′ between bearing walls. However, all structures, regardless of span, made of reinforced concrete or with steel framing, must have an engineer. The board contends the use of reinforcing rods and grout in the concrete-block walls of Villasenor's store makes it a reinforced-concrete building.

It was seven years ago when Wright moved to California from Indiana. He was denied a California license when, according to Executive Secretary **Robert Kelley** of the architect examiners, he failed to pass a civil engineering section of a test given him by the examiners. Wright challenges the legality of what he terms the "schoolboy test." Blaming jealousy among other architects in his (Del Mar) section of the state, Wright said: "I guess I was getting too much business, and now they're going after me."

The new trend toward appointment of city housing coordinators continued as San Diego named **Glenn Wade,** former city manager of nearby Coronado, to the job. One of his main duties: helping speed disposal of leftover wartime temporary public housing units.

The on-again, off-again move by **Joseph McMurray,** 42, brilliant staff economist for the Senate banking committee, to the New York City Housing Authority was on again last month. McMurray told HOUSE & HOME he would take the $20,000-a-year job as executive director of the nation's biggest local public housing agency sometime this month. What would happen to the present executive director, **Gerald J. Carey,** 50, was not announced at once; expectations were he would be named assistant to Chairman **Philip J. Cruise,** 56.

Five more new FHA field directors took office: in Albany, N. Y. **Thomas Henigan** succeeded **Joseph H. Murphy;** in Wichita **Richard Clausing** succeeded **Ed Chapman,** newly appointed assistant to the commissioner; in Los Angeles **Norman M. Lyon** replaced **John E. McGovern** who resigned to enter private business; in New Orleans **Ralph H. Agate Jr.** succeeded **Lawrence J. Dumestre,** as of July 30th; in San Diego **Walter L. Forward Jr.** filled the vacancy caused by the retirement of ailing **Edward A. Walsh** several months ago; in Washington, **A. M. Prothro,** FHA's acting general counsel, was named head of the agency's new security program.

DIED: Planning Official and Builder **Robert M. Watkins,** 52, who had built many of the homes the College Park section of Maryland, and who was the controversial chairman of the Maryland-National Capital Park and Planning Commission, July 3 in Washington, D.C.; **Arrigo M. Young,** 70, dean of Seattle architects, who designed such Pacific northwest structures as Yellowstone Park hotel, Seattle children's hospital and civic auditorium and University of Washington fisheries center, June 27 in Seattle; Builder **Harry Goldstine,** 85, past president of the American Institute of Real Estate Appraisers and of the Chicago Real Estate Board, June 21 in Atlantic City.

60-year-old house remodeled, draws throngs at home show

As a demonstration of what remodeling can do for an antiquated dwelling, the Los Angeles Remodeling Contractors Assn. bought the abandoned church parish house shown at the right (for $750), moved it to the Los Angeles Home Show (for $700) and remodeled it into the modern melange of wood shakes, stone siding and service-station-sized carport shown above. To point up the contrast, the remodelers left three of the seven rooms in "before" condition, including one high-ceiling bedroom complete with brass bed and chamber pot.

The 1,800 sq. ft. structure was completely rewired, air conditioned, insulated, equipped with new utilities and interior decor. The association said it was delighted with the business tips provided by written inquiries that came from some of the estimated 75,000 people who inspected the house. A. J. Blackstone, in charge of the renovation, said much material was donated, making the cost of the job hard to figure.

Photos: Dept. of Water & Power

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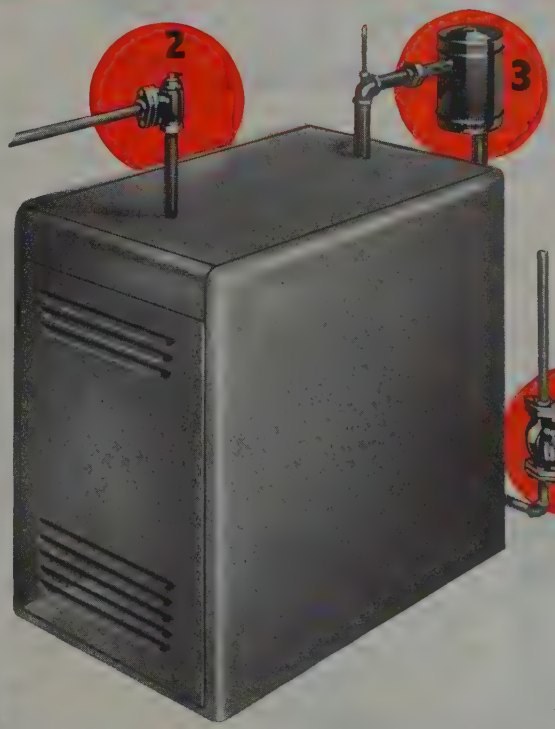

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*Reg. U. S. Pat. Off.

EVENTS

Northwest District, American Institute of Architects, conference, **Aug. 19-21,** Eugene, Ore.

Western Mortgage Banking Seminar, sponsored by the Mortgage Bankers Assn. and Stanford University, **Aug. 22-27,** Stanford, Calif.

National Home Furnishings Show, Sept. 9-19. 71st Regiment Armory, 34th St. and Park Ave., New York.

The Producers' Council, annual fall meeting, **Sept. 13-14,** Hotel Commodore, New York.

Pennsylvania Society of Architects, annual meeting, **Sept. 16-19,** Great Lakes cruise on the *South American,* leaving from Erie, Pa.

National Home Week, Sept. 19-26.

Midwest Conference of Building Officials and Inspectors, annual conference, **Sept. 20-22,** Hotel Commodore Perry, Toledo.

Gulf States District, American Institute of Architects, regional conference, **Sept. 26-28,** Marion Hotel, Little Rock, Ark.

Mortgage Bankers Assn., 41st annual convention, **Sept. 27-30,** Conrad Hilton Hotel, Chicago.

Porcelain Enamel Institute, annual meeting, **Sept. 29-Oct. 1,** The Greenbrier, White Sulphur Springs, W. Va.

California Council of Architects, convention, **Sept. 30–Oct. 2,** Hoberg's, Lake County, Calif.

National Retail Lumber Dealers, exposition including exhibits of building materials and equipment, **Oct. 2-10,** Kingsbridge Armory, New York.

National Hardwood Lumber Assn., annual convention, **Oct. 5-7,** Rice Hotel, Houston, Tex.

National Assn. of Housing and Redevelopment Officials, annual meeting, **Oct. 11-14,** Bellevue Stratford Hotel, Philadelphia.

Architectural Woodwork Institute, annual convention, **Oct. 15-16,** LaSalle Hotel, Chicago.

New York State Assn. of Architects, convention, **Oct. 21-23,** Lake Placid Club, Lake Placid, N. Y.

North Central States District, American Institute of Architects, regional conference, **Oct. 28-30,** Kahler Hotel, Rochester, Minn.

New England Council of Homebuilders, first annual New England builders' convention, **Oct. 29-30,** Statler Hotel, Hartford, Conn.

Texas Society of Architects, convention, **Nov. 3-5,** The Texas Hotel, Forth Worth.

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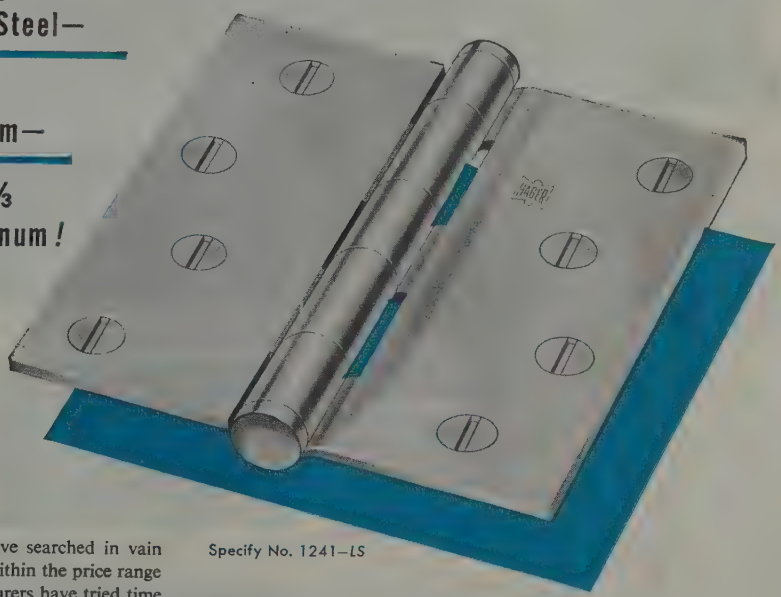

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LETTERS

FHA

Sirs:

Congratulations on the entire section on Federal Housing Administration (H&H, May '54). Your editorial and the "half-truths" are outstanding.

C. STOTT NOBLE, *assistant director FHA*
Greensboro, N. C.

Sirs:

May I raise one small voice from the opposite side of the wall?

I believe we are all in agreement that the principles of FHA cannot be called into question. . . . But changes in personnel have been observed under the following conditions:

1. Death or resignation because of stomach ulcers, nervous breakdown, etc.
2. Quitting in disgust.
3. Separation "for cause," after protesting to officials about the abuses in the agency, hoping to get a housecleaning from within.

Further, I doubt if any of us are naïve enough to believe that the situation in South Carolina (News, June '54) is an isolated one.

FHA should remain. It's the administration of the agency that needs the scrubbing.

F. G. BOLTE
South Miami, Fla.

Sirs:

Last week I visited FHA Washington headquarters and was deeply impressed by the progressive attitude backed up by good engineering ability shown by the director of underwriting and his assistants.

I believe that the architectural and engineering services rendered by the FHA can be of tremendous value to the country and I hope that the administration will see fit to assist Mr. Bowser in the expansion of those facilities.

F. VINTON LONG
Shreveport, La.

ONE-STORY HOUSE TOO EXPENSIVE?

Sirs:

I am surprised that the two-story house idea (H&H, Feb. '54) hasn't been brought up before since the cost factor is so important. A 50% reduction in cost of floor space per square foot is the biggest news that anyone could hope to find. In other words, how can anyone afford a single-floor plan?

J. D. LOVELEY, *chief engineer*
Airtemp Div., Chrysler Corp.
Dayton, Ohio

SPLIT-LEVELS PROFITABLE

Sirs:

Your April issue on what has been going on in the "split-level" world is unlimited.

The clear-cut analysis of this problem makes sense in terms of dollars for the builder.

SIDNEY M. SHELOV, *AIA*
New York City

PENSION FUND FOR MORTGAGES

Sirs:

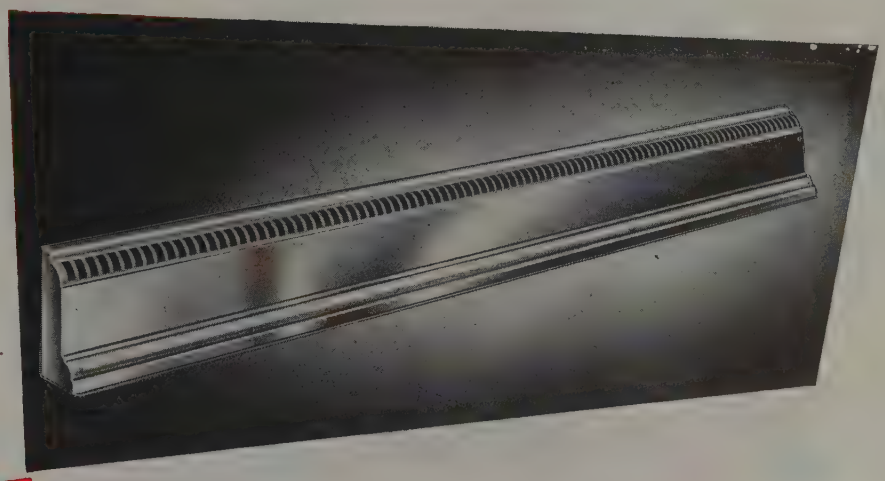
. . . The question of FHA and VA backed-up certificates privately issued subject to the old FHA regulations may be a means of interest-

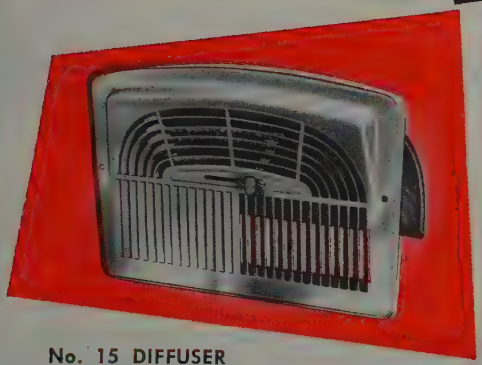
continued on p. 66

HANDLE HEAT LOADS WHERE THEY OCCUR WITH

Air Control PERIMETER DIFFUSERS

The one *field-tested* line that meets every type of perimeter application.





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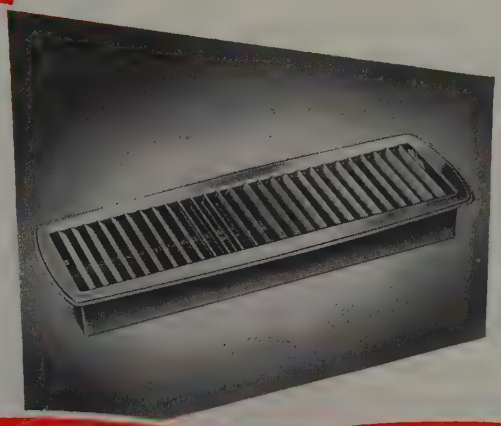
By every measure: customer appeal, year 'round comfort and easy, fast installation . . . here is *the* leading baseboard perimeter diffuser. It has been proven in 20,000 modern homes.

No. 15 DIFFUSER FOR SIDEWALL USE

With a spread that blankets up to 14' of wall or window area, you need fewer runs when you specify Air Control No. 15. Designed with minimum resistance, it is ideal for the new small pipe, high velocity systems. Balanced from the face, it lets you create the fine adjustment that insures comfort throughout the home . . . an especially important factor in combination heating-cooling systems.

No. 42 DIFFUSER FOR FLOOR INSTALLATIONS

Here's completely new, completely modern styling that closes sales . . . a study in good taste speaks for the whole job. Wafer-thin valves plus new curved vanes create the lowest resistance factor. Vanes are fully adjustable to let you put air exactly where you want it.



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FOR WINTER AND SUMMER AIR CONDITIONING

AIR CONTROL PRODUCTS, INC.

HULL STREET DEPARTMENT A

COOPERSVILLE, MICHIGAN

ing the pension funds to make investments in mortgages, because under that arrangement the loan is automatically trusteed and the problems of servicing are completely eliminated to the same degree of collecting interest and principal on corporate bonds.

LAWRENCE A. EPTER
New York City

WHAT PRICE QUALITY?

Sirs:

"What sells a house?" (H&H, May '54) is a fine contribution to the industry.

Your article indicates a contradiction when it points out that prospective home owners have ample funds to buy quality homes at a time when homebuilders are tending to cheapen homes, sometimes at the expense of quality. I do not want to confuse economies through standardization, mass production and improved techniques, which I am in favor of, with construction methods that actually cheapen.

WILLIAM GILLETT, *vice president*
Detroit Steel Products Co.
Detroit

PROTECTION NEEDED

Sirs:

I do agree wholeheartedly with Cliff May and Chris Choate (H&H Letters, June '54) that designers, architects and builders need protection for their work. Personally, I am willing, able and ready to do my part to establish a forum like ASCAP.

PAUL LASZLO
Beverly Hills, Calif.

USE THE OAKS

Sirs:

Is the architectural profession aware of the scourge that is hitting our oaks — and that some predict will in the next ten years deliver into our hands billions of board feet of dead oak, for better or for worse?

Most of it will necessarily be left to rot in the forests because we do not have enough mills to turn such a quantity into flooring in so short a time.

Have architects given a thought to putting this avalanche of oak to use?

FRAZIER FORMAN PETERS
Warwick, N. Y.

JOBS

Sirs:

From all indications the championing of good architecture by HOUSE & HOME is beginning to reach the builders, as I have received three large jobs as a result of the January issue. I feel a great deal of the tremendous advancement in builder houses within the past few years can be traced to your magazine.

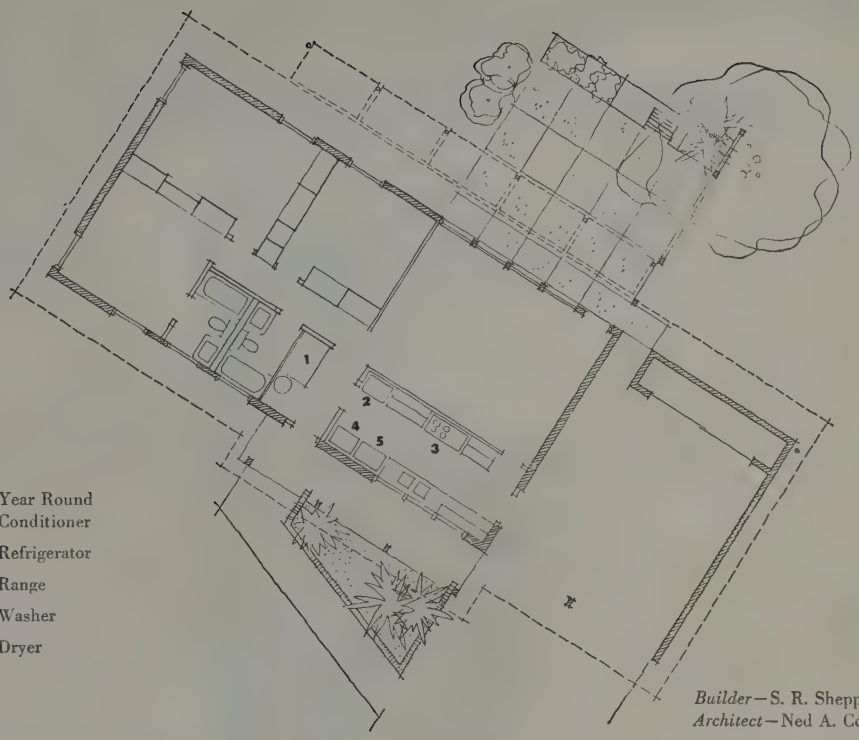
DONALD H. HONN, AIA
Tulsa, Okla.

CHANGE OF PLANS

Sirs:

Your May issue is tops. . . . Most builders feel that they know the fine sales items that were in the May issue but these are soon forgotten and it takes a good refresher course to

continued on p. 74

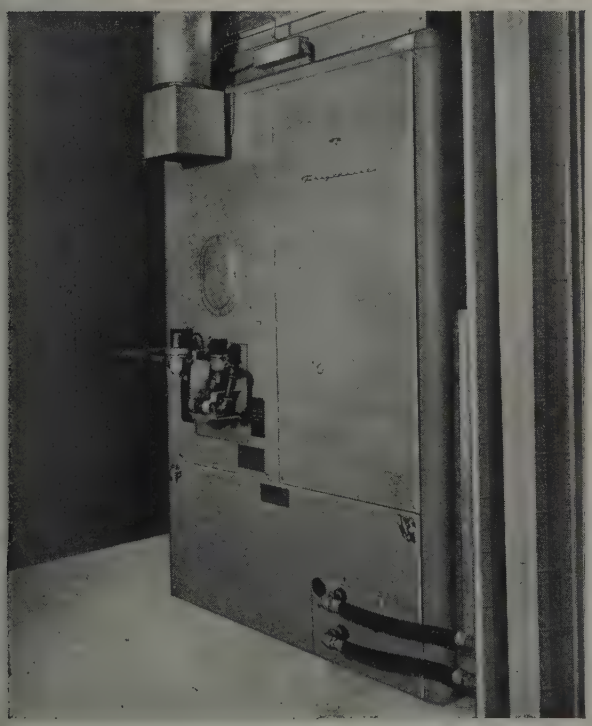


1. Year Round Conditioner
2. Refrigerator
3. Range
4. Washer
5. Dryer

Builder—S. R. Sheppard
Architect—Ned A. Cole

Year Round Frigidaire Conditioner

bring modern living to this home in the NAHB Air Conditioned Village, Austin, Texas



Frigidaire Central Air Conditioning makes this a true "One Temperature Home" all year round!

Let the cold winds howl and the hot sun beat down—*this* modern Texas home, protected by a Year Round Frigidaire Conditioner, will offer its owners the healthful comfort of one level temperature 365 days a year.

You, too, can add this sales-clinching feature to the homes you build and still keep your prices competitive because of Frigidaire's low cost and simplified installation. The unit shown here heats with gas in winter, cools with mechanical refrigeration in summer. Provides complete filtering, circulation and temperature control.

The Year Round Frigidaire Conditioner is a compact single unit no larger than many furnaces alone. Only 46″ wide, 25″ deep at the base and 76″ high, it fits easily into closets and utility rooms as well as basements. Also available for heating with oil.

Call your Frigidaire Commercial and Air Conditioning Dealer—or the Frigidaire Distributor or Factory Branch that serves your area. Or write: Frigidaire, Dayton 1, Ohio. In Canada, Toronto 13, Ontario.

Frigidaire Air Conditioning and Appliances—built and backed by General Motors

LETTERS *continued*

wake us up. We had a new plan on the board when your book arrived and proceeded to erase, expand, change and add to it many cardinal things you brought back so well.

ANDY PLACE
Place & Co., Inc.
South Bend, Ind.

KUDOS

Sirs:

From the long-range viewpoint, your May editorial, "We're all being outsold," seems of greater importance even than "Now is the time to speak up for FHA."

JOHN MATTHEWS
Regional vice president, NAHB
Little Rock

Sirs:

I read HOUSE & HOME every month because it covers every aspect of the building business that I want to know about.

. . . And I'm tickled to death over the job you plan to do with the lumber dealers.

CLARENCE THOMPSON, *chairman*
Lumber Dealer's Research Council
Champaign, Ill.

Sirs:

Your magazine has always been a most valuable adjunct to the business of building better homes at a lower cost.

MARTIN L. BARTLING JR.
Ceilheat, Inc.
Knoxville, Tenn.

Sirs:

. . . We are tremendously pleased with the attention you are giving to adequate wiring.

O. C. SMALL, *manager*
National Adequate Wiring Bureau
New York

Sirs:

. . . One of the most interesting and enlightening books on the market.

JOHN FUOROLI
Rhode Island Cinder Block Co., Inc.
North Providence, R. I.

Sirs:

Your May '53 issue—and every issue—has been the greatest help. . . . A great publication.

KENNETH DAVIDSON
Drayer-Hanson Inc.
Los Angeles

Sirs:

No other publication furnishes us with up-to-date building news in such a concise and interesting manner. The reading of this publication is a "must" for all employees in our mortgage and appraisal departments.

FREDERICK T. BACKSTROM
Executive vice president and secretary
First Federal Savings & Loan Assn.
of New Haven

OMISSION

SORRY TO SEE IN JUNE ISSUE THAT WE DID NOT GET CREDIT FOR THE INTERIOR DESIGN OF GENE LEEDY'S HOUSE.

PHILIP HALL
Sarasota, Fla.

● H&H regrets that Mr. Hall's design was not credited.—ED.

You can sell houses by what you keep out of them

Make sales points out of dust, dirt and allergy pollens. Keep them *out* of your houses with Precipitron. Your clients will like the way this new electronic air cleaner simplifies housework, cuts cleaning bills and relieves allergy suffering.

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REVIEWS

(In a seminar on materials at the recent AIA convention, Ben John Small, AIA, spoke of the properties of resilient floorings. H&H is reprinting his remarks, abridged for space.)

Whenever someone asks me about the selection of appropriate resilient flooring, the first thing I think of is "200-75-40-25." This is not a frantic football signal. It is my way of remembering the indenting strength of flooring.

There are six basic resilient floorings: asphalt cork and rubber tile, linoleum, composition tile, and many types of polyvinyl resin flooring (we should always distinguish the "all vinyls" from the "vinyl asbestos").

Now for the 200-75-40-25 story.

Composition tile (developed some 40 years ago) and rubber tile are superior in resistance to indentation since they resist a static load of 200 lb. per sq. in. Linoleum is next at 75 lb., then cork at 40 lb. Last are asphalt and vinyl asbestos tile, because they indent at 25 lb. per sq. in. A 160-lb. man, seated in a chair without protective rests, imposes a load of 40 lb. per leg. But if he leans backward, the load is borne by only the back legs. Theoretically, each of these bears 80 lb. per sq. in., but what happens is that the bearing surface is reduced when the legs are tilted. The sharp edge at the back of the leg bears the entire weight, which might reach 300 lb. per sq. in. So you see, the difference in indentation resistance has a definite bearing on the choice of resilient flooring.

Swivel-type furniture rests, which leave the bearing surface of the rest flat on the floor while the chair leans, will minimize the indentation hazard. In selecting resilient flooring, to be realistic, you must take into consideration the cost of rests, and their installation. Often a floor of high indentation resistance can be used more economically than a low-priced floor that demands these rests.

Troubles on slabs

What happens when a resilient floor is laid on a concrete slab in direct contact with the ground? The moisture in the ground permeates through the concrete, dissolving the free alkali in the slab. Linoleum and Linotile are made from linseed oil, and since the moisture coming through the concrete slab is strongly alkaline, the solution attacks the oil and causes deterioration, discoloration, brittleness and destruction of adhesives. [ED. note: An unbroken, impermeable vapor barrier beneath the slab will prevent water vapor migrating upward through the slab.] For other floorings, such as rubber tile, which is less vulnerable to alkaline moisture, special chemical-set adhesives are available.

With radiant-heated floors, water temperatures should not exceed 120° F., nor should floor temperatures exceed 85°. Heats over 85° will soften some floorings and render some adhesives ineffective. The general practice of

continued on p. 86

Peoria project architects say:

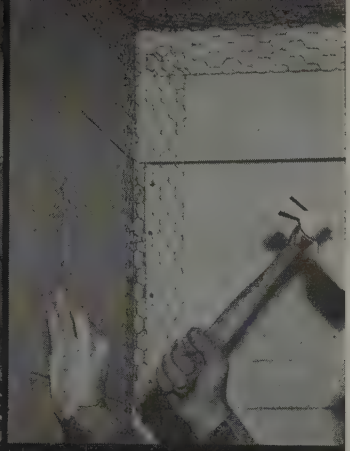
"When we want the best plastering job, we specify reinforced plaster, and we know Keymesh, Keycorner and Keybead do exactly the job we want. Even when price is a major consideration, we like to use lath and plaster because it is superior to "dry wall" construction and assures the durability, protection and long-range economy that makes the best investment."

J. Fletcher Lankton
John N. Ziegele and Associates
Architects—Engineers
Peoria, Illinois

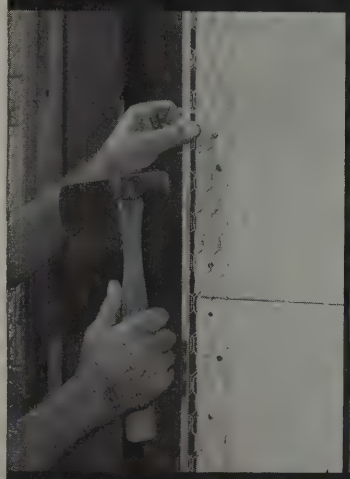
C. S. Miller, President of Mid-States Plastering Contractors, says:

"If you want a good, strong plastering job, I recommend the 3 Keys to Stronger Plaster—Keymesh, Keycorner and Keybead. These three wire reinforcement products give very good protection against cracking. They're easy to work with, too. Keymesh and Keycorner unroll flat, don't cut the hands, and are put up easily, quickly. Keybead is easily applied for a straight, solid corner. You can't beat the 3 Keys to Stronger Plaster."

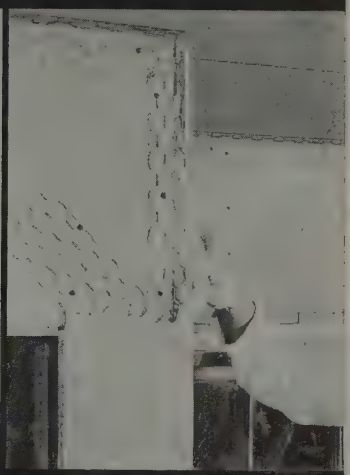
Easy to use—Keycorner unrolls flat, cuts easily, handles easily, speeds the job. Cuts down waste, too.



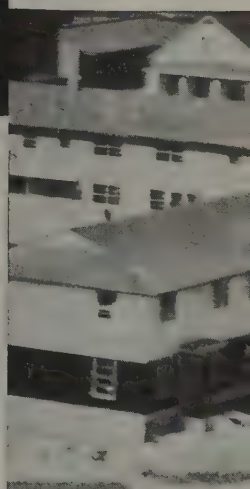
Preformed—Keycorner is preformed for corners, joints, ceiling junctures. Flex it and it fits right in.



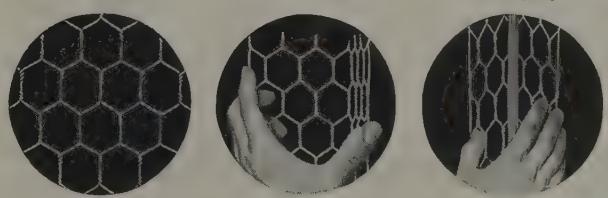
Solid Corners—Keybead's precision-formed bead on open mesh fits all outside corners, quickly, easily. Full, solid corners result.



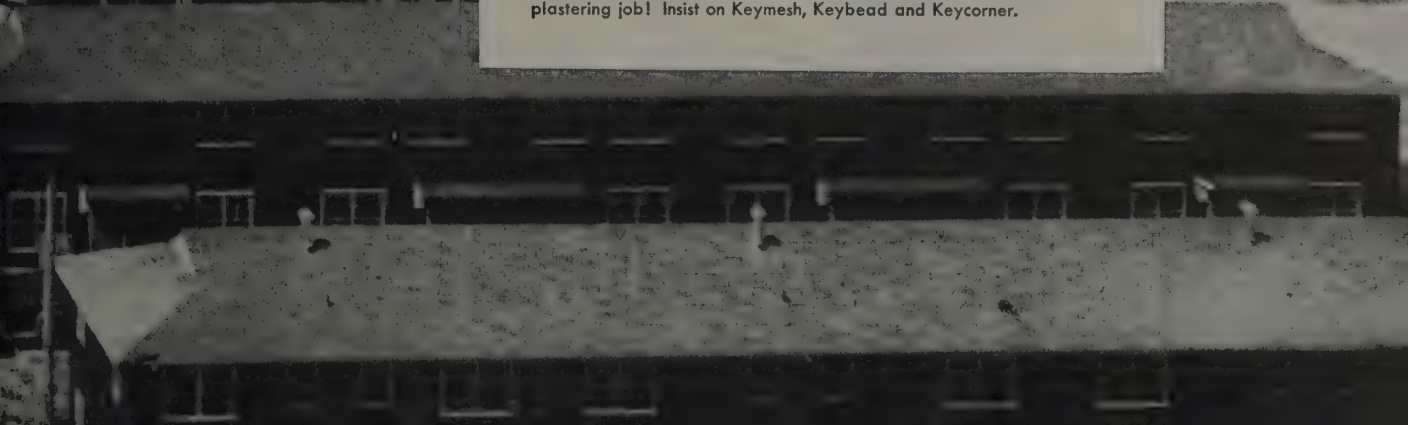
Easy Trowelling—Plaster flows evenly through open wire mesh; easy trowelling. Multidirectional reinforcing is backbone of strength.



KEYMESH **KEYCORNER** **KEYBEAD**



When you use the 3 Keys to Stronger Plaster, your finished job beats "dry wall" for strength, fire safety and beauty. The 3 Keys stop plaster cracks before they start. The superior strength and protection of your construction will last far longer. Be sure your constructions get the extra strength and fire safety of lath and plaster. And get the best plastering job! Insist on Keymesh, Keybead and Keycorner.



using 1" pipes laid 12" apart presents no problem, but larger pipes at wider intervals will produce too much heat for resilient floors. If you insist on using resilient floors where the heating system does not conform to normal usage, it would be well to get the manufacturer's recommendations first — and suffer later. On radiant-heated slabs, on grade or below, specify floorings not affected by alkaline moisture. For suspended floors, specify whatever floor covering you would in a non-radiant-heated floor.

The amount of heat that will pass through a flooring is important on radiant-heated floors. Rubber tile is the best heat conductor, then asphalt tile and vinyl asbestos tile. Then, in descending order, are composition tile, linoleum and cork tile.

Oil and grease

Standard asphalt tile and cork tile have least resistance to vegetable oils and greases, Linotile and linoleum the greatest. Cork tends to absorb more oil and grease than other floorings. Greaseproof asphalt tile has the same properties as standard asphalt tile, however it is more immune to common oils and greases. Composition tile, linoleum, vinyl and vinyl asbestos tiles have excellent oil- and grease-resistance characteristics. Rubber tile is vulnerable to these substances and should not be used where this condition is likely.

Long-range cost factors, rather than just initial cost, should be considered, since most resilient floors are expected to wear ten or more years. Composition tile is easiest to keep looking good. I know of a heavily occupied school that requires no more than four waxings a year. Linoleum is a good second. Asphalt and rubber tile are comparable in this respect, slightly below linoleum. Cork tile usually requires the most maintenance. If you were to use economy of maintenance only as a yardstick, composition tile is excellent for areas where heavy traffic, wet, gritty feet or spilled liquids are involved.

Remember that asphalt and vinyl asbestos tiles are thermoplastic, and irregularities in the underflooring will show through, and no amount of superficial maintenance will chase these ghosts. Since these tiles have a tendency to seat themselves, they are never rolled in place. All others usually are.

How much?

I cannot offer precise price categories. Local circumstances, labor and job conditions will distort relative prices. In the main, asphalt tile and light-gauge linoleum are lowest in price; then greaseproof asphalt tile and standard-gauge linoleum; next 1/8" linoleum and vinyl asbestos tile. Rubber, cork and composition tile cost about the same, and are about 2½ times the installed cost of standard asphalt tile. Vinyl tile is still higher.

continued on p. 178

A monthly report on important developments in the modernization of mortgage credit, with particular emphasis on the expanding potential of the package mortgage, the open-end mortgage and the expandable mortgage.

Open-end mortgage system would balk repair loan frauds by "dynamiters"

Washington headlines highlighting the abuse of FHA Title I repair loans focused attention more than ever on the open-end mortgage plan, whose use homebuilding industry leaders have again and again declared "the one best way to finance modernization and repairs."

Racketeer contractors would never be able to exploit home owners if they had to sell their shoddy goods or services under open-end mortgage financing. This would thwart "dynamiters" from the start, because in each sale: 1) they would have to deal with the original lender who still held the mortgage on the buyer's home; 2) to keep foreclosure risk at a minimum, each of these lenders would have a stake of his own in protecting the home owner from assuming too much debt, and 3) from increasing his mortgage balance for anything that was not worth-while to maintain or to increase the basic value of his property.

Shysters who abused the FHA Title I repair loan program usually concentrated their "stampeding" operations in a single neighborhood. They usually operated on a single line of credit from one unscrupulous loan source. These lenders were concerned solely with the 9.7% interest they could obtain on their government-guaranteed loans. They cared not at all whether the home owner was getting a square deal or might be dangerously overextending himself with too many short-term debts.

Courting disaster. For those who cannot pay all cash, but can safely and easily make relatively large monthly repayments, short-term Title I loans are very useful and convenient—a distinct advantage over long-term loans. But for millions of families monthly repayments on short-term loans for major home repair or improvement jobs are too steep, although they could manage the payments for the same jobs if they were spread over a much longer period.

On a $1,000 short-term Title I loan, for instance, repayments over three years would be $31.90 a month, or more than half as much added to the $57 a month needed for interest, amortization and FHA insurance on a 25-year, 4¼%, $10,000 home mortgage. For many families repayment at this rate would be "too much and too soon." But if they borrowed this same $1,000 on an open-ended mortgage re-advance at 4½% they could easily meet the repayments of only $7.91 a month that would be required if their mortgage continued another 15 years, or only $6.60 a month if it extended another 20 years.

The most frequently cited cause of home-mortgage defaults since World War II has been overextension of burdensome short-term credit to young home owners. Many were swamped by high monthly repayment requirements, a condition accentuated by the operations of the repair and improvement "dynamiters." Most victims probably would have escaped disaster if they had made the same purchases on long-term repayment open-end mortgage financing.

Answers for dissenter. Acceptance of the open-end mortgage has become more widespread every year. From 1948 to 1953, reborrowing under this type of financing increased from about $100 million to $500 million annually. But there have been a few critics. Recently one of them wrote an article in *Banking*, journal of the American Bankers Assn. The author was John J. Redfield, of Cadwalader, Wickersham & Taft, general counsel for a number of New York savings banks. He approved open-end reborrowing for "appropriate capital improvements which increase the value of the security." But he opposed re-advances for repair, maintenance or nonhome purposes.

Most of Redfield's opinions, however, were at wide variance with the views of the majority of housing and lending industry leaders. Said President Ralph R. Crosby of the US Savings & Loan League only a few weeks earlier, when forecasting a record home-repair and improvement program this year: "The open-end mortgage is one of the most useful devices developed in recent years for encouraging sound home ownership and for fitting home-financing procedures to present-day needs."

In similar vein, USS&LL General Counsel Horace Russell and other leading advocates of open-ending have repeatedly pointed out that:

- The national economy requires a system like the open-end mortgage so an owner can keep up the biggest investment of his life without strapping himself, if he cannot afford to have it done with short-term high monthly repayment loans.

- If an owner allows his property to go into disrepair because he cannot afford a short-term loan, this not only depresses the value of his own property but also the value of his neighbor's.

Selling Tough?

You'll profit in any market with these P&H Home price-value combinations

Under the pictures, we list some prices and homes that typical P & H builders are offering . . . builders who are building and selling more homes than ever, and profiting. So can you, if you build P & H Homes. You'll see why when you study the new P & H Home plans and packages.

First of all, there are really appealing designs — sales-appealing. Then, the quality of construction and materials is top grade. Names like Fiberglas, Rusco, Thermopane, Upson Strongbilt, Youngstown—they all make P & H Homes *better* homes. And, priced as they are, they offer more space, convenience and durability than just about any other home you could build at the price.

Write for plans and full details today. See how you can build more, *profit* more with P & H Homes.

P & H HOMES, in 2, 3 or 4 bedroom models, are priced to sell from $6,000 to $20,000

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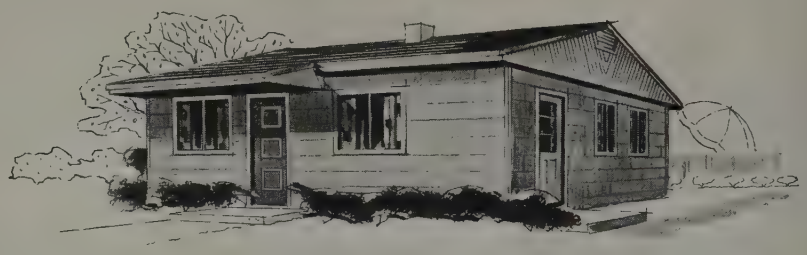
● The P & H Gateway 2 Bedrooms, 672 sq. ft.



Now sell a quality home to the low-cost market. It has the same quality and materials as the best P & H Homes. The P & H builder in Youngstown, Ohio, offers the Gateway for— **$300** *down,* **$37** *a month.*

● The P & H Dover 3 Bedrooms, 768 sq. ft.

Three bedrooms for $51 a month! Hard to believe, but true. The P & H builder in Racine, Wis. is just one of many builders who offers the Dover for about **$350** *down,* **$51** *a month.*

● The P & H Lee 3 Bedrooms, 920 sq. ft.

More usable space, more luxury features, more sales appeal than just about any home in its price class. It's selling—profitably—in Franklin, Ind. for just **$500** *down,* **$55** *per month.*

● The P & H Regent 4 Bedrooms, 1,016 sq. ft.

Your market crying for a big home at a low price? It can be done—and profitably. Example: A typical P & H Builder offers the Regent for just **$600** *down,* **$62** *a month in Carpentersville, Ill.*

the P&H Line

house+home

August, 1954

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VOLUME VI, NUMBER 2

Cover: Minneapolis patio house by Philip Johnson; photo: Warren Reynolds

Your nicest room can be outside your house

Plenty of people know how to plan the inside of a small house. Plenty of people know how to landscape a 75′ lot. But how many people really know how to do both—plan lot and house together—and, in doing it, get an extra room thrown in as a cheap bonus?

That extra room, the dividend you get for good indoor-outdoor planning, is the patio. And the next 20 pages are devoted to its design.

For the purpose of this story, we will define a patio as an outdoor space surrounded by house walls, fences or screens on at least three sides. It is the bite out of the U, the center of the doughnut, the hole in the Swiss cheese, the bubble in the champagne. It does not come free of charge, but it is cheaper than an ordinary room with four walls, floor, ceiling, heat, windows, and so on.

Moreover, it can be a great deal handsomer than an equivalent indoor room, a great deal airier, cooler, easier to maintain. And—if it has been designed with taste and discrimination—it can sell your house faster than just about anything else: for nearly everybody recognizes a bonus when he sees one.

Lionel Freedman

W. T. Grant House, Greenwich, Conn. Edward D. Stone, architect

We said that patios should be designed with taste and discrimination

The dividing line between a glamorous, walled garden and a dreary-looking concrete yard is sometimes very thin, especially in inexpensive houses. How to make sure you stay this side of that dividing line is demonstrated in the four handsome patio houses on the next 20 pages. And on pp. 104-105, we have listed some of the devices used by patio planners to make their outdoor rooms the nicest things on the premises.

Patios helped sell these

Deercroft Builders, Pa.
Bob von Gerbig, designer

Stern & Price, Calif.
Cliff May & Chris Choate, architects

National Homes Corp.
Charles Goodman, architect

Robert Gerholz, Mich.
William K. Davis, architect

The production houses shown above
come from all over the country,
but they have three significant points in common:
each incorporates a pleasant patio in its plan,
each was designed by a good architect,
and in several cases a good landscape architect, too,
each has sold fast in considerable numbers,
topping the competition in its area.
After a long day's house-hunting,
these patios stuck in their buyers' minds.

Photos: L. S. Williams; M. L. Parker; Ulric Meisel; Russell Illig; A. J. Sepulveda; Roger Sturtevant; Frank Lotz

Here are the ingredients of

Floors that are easy to use, easy to care for, easy on the eyes. Bring the house down or the patio up so they are at the same level (making sure to drain the patio away from the house). This makes the patio a real extension of the indoors, adding to its size and convenience.

Heavily used areas should be paved with concrete, hard brick, stone, cast stone, wood blocks or tile to support feet, furniture, wheeled toys—and to be washed or swept easily. Neutral colors are best: in a hot, unshaded place the raw white of unfinished concrete can create a dazzling glare, heat up glass-walled adjoining rooms. (Use pigments or stains to get a soft integral color.) Black asphalt can absorb enough sun to become uncomfortably hot and sticky, then reradiate all its stored-up heat into the house at night when it should be cooling off. Break up the paving into patterns, leaving open spaces for planting to avoid monotony, help absorb heat and noise. Less-used areas can be covered with grass, clover, dichondra, gravel, tanbark.

Walls that make the patio private without boxing it up. Screen off undesirable views with fences or masonry walls planned to be irregular, patterned or planted. Design the fence for the job (e.g. solid where you need to keep out strong winds, pierced where you want to let cooling breezes through, translucent where you need light).

builders' houses

Joseph Eichler, Calif.
Jones & Emmons, architects

Robinson Homes, Wash.
Paul Kirk, architect

Gavello & Perego, Calif.
Anshen & Allen, architects

Fred Loucks, La.
Curtis & Davis, architects

a good patio

Roofs that shade part of the patio and adjoining rooms. Shading is vital on the west side if you want to use the patio on summer afternoons. Deep roof overhangs, porch roofs, pergolas, latticework, overhead vine trellises or the spreading branches of a fair-sized tree—all make a patio twice as livable in summer. In winter, deciduous vines and trees shed their leaves, let welcome sun through.

Planting that does a specific job and is easy to maintain. Many of the most familiar plant materials—grass, flowers, hedges and many shrubs—require the most attention. Ask your landscape architect about attractive low-cost, low-maintenance planting.

Decorative built-ins that do one or more jobs. Your patio probably needs at least one fixed, three-dimensional object as its decorative focal point—a bed of flowering shrubs, a piece of sculpture or a couple of large rocks chosen for their sculptural forms. Even more useful: raised plant beds with wide edges for sitting; a low stone wall that can be used as a bench; a sandbox tied decoratively into the patio's over-all design.

Water: for sparkle, for sound, for cooling. A shallow reflecting pool can be designed inexpensively to double as a children's wading pool, a setting for water plants, a bird bath. Besides being an appealing decorative asset, water helps keep a patio cool by evaporation, has an even greater psychological cooling effect. A fountain or a trickle of water falling into a splash basin adds the pleasing effects of water's sound and movement (see photo second from right, above).

Night lighting to prolong the use of the patio, create dramatic effects. Overhead spots, installed in roof overhangs or tree branches, will illuminate the patio, eliminate blackness beyond wide windows. Waterproof floodlights concealed at the base of trees or fountains will turn the garden into a glamorous stage set at night. Use white light; colors create weird effects.

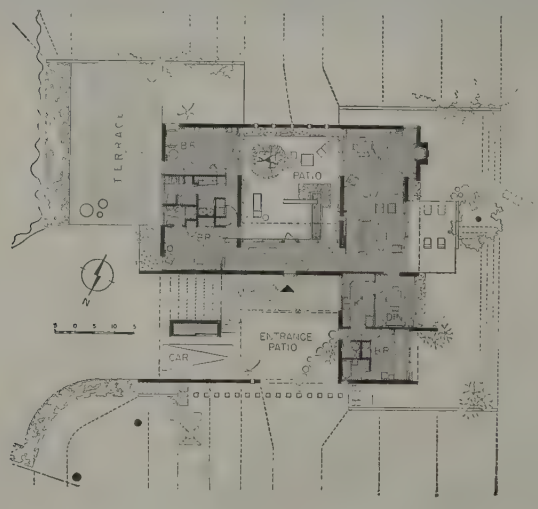
Movable outdoor furniture to set off the patio. Chairs and tables should be strong and light so they can be moved around, waterproof and durable so they can be left out in the rain or cleaned with a hose. Don't use too many or too bulky pieces; underfurnish the patio, like the other rooms of the house, to make it seem larger.

Above all, lay out your patio so it can be used. Dining space and play space should be near the kitchen for easy serving, easy supervision. Pools, planting, benches, etc. should be placed where they do not get in the way of normal circulation or cut down usable terrace area. And don't forget a hose connection on the patio side of the house!

What patios can do for your house:

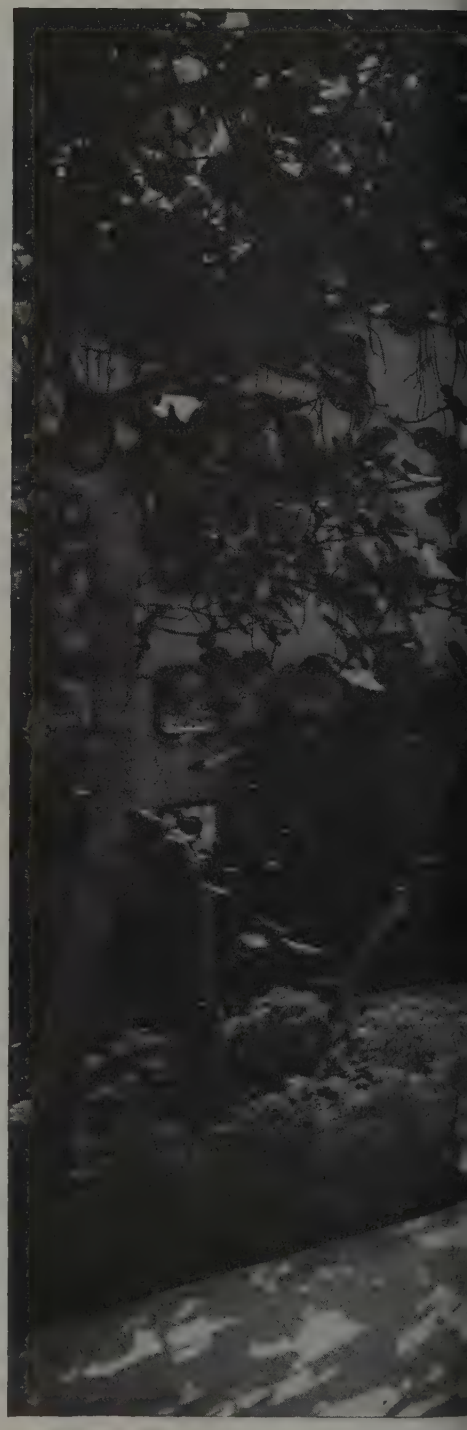
Outdoor rooms can double

This is a 4,200 sq. ft. house—*but more than 2,000 sq. ft. of its floor area are located out of doors.* In fact, for almost every indoor room Designer Peter Fraser has built one completely equipped, completely "furnished" outdoor room that could be used for a large part of the year in *any* latitude, and can be used all year round in its Florida setting.



For example: this house has a 540 sq. ft. indoor living room next to a 670 sq. ft. living patio; it has a 220 sq. ft. foyer and an entrance court outside that is almost three times as big; and it has several small terraces, protected by cheek walls, that add both a *sense* of space and *actual*, usable space to bedrooms, dining area and living room.

In short, this house is an excellent demonstration of how to get the most out of a narrow and deep lot—and how to make a large part of that lot serve *not* as a shapeless appendage without privacy or definition, but as eminently useful living space directly accessible from every major room in the house.



Living room by day—and also by night: for this patio is equipped with small, flexible lighting fixtures hidden in flower and plant beds. There are many outdoor outlets around periphery of patio, so that these fixtures can be moved and plugged in at will. In addition, Designer Fraser has provided built-in soffit lights in roof overhangs. Floor of patio is white tile, walls are white stucco, fascia beams are gray. Planting includes sea grape tree (left), tropical ferns, palms. Just like any other room, the outdoor space has a "ceiling height"—but it is suggested by the fascia bands, rather than real. Small views are opened up through peepholes in one wall.

LOCATION: Jupiter Island, Fla.
PETER FRASER JR., designer of house and landscaping
SANDS CONSTRUCTION CO., INC., general contractor

your living space

Living room and patio (above and below) are a single, integrated, 1,200 sq. ft. indoor-outdoor living space, separated only by sliding glass walls.

Photos: Rada

Carport at left, outdoor foyer at right. Note glimpse of living patio through front door of house

Through an outdoor foyer to the

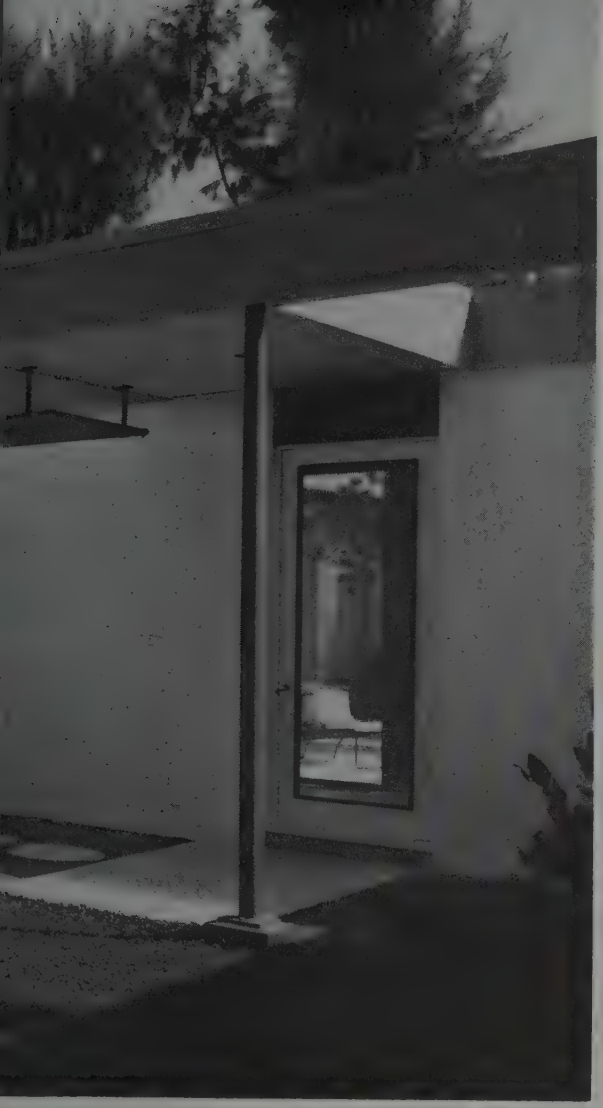
Approaching the house, you pass through a succession of small patios, each of which has its own distinct character and function, each of which is part of one large, 1,300 sq. ft. space.

First there is a covered area, comprising the carport and the "outdoor foyer." These two are separated by a large storage bin. From here you descend three steps (a rather nice touch designed to make the entrance more formal) into an entrance court. A pattern of circular stepping stones directs you to the front door, and a suspended canvas canopy serves both as a filter for sunlight and as a shield against rains.

As you open the front door of the house you experience one of those dramatic surprises made possible by the patio plan: for instead of finding yourself indoors as you might expect, you are now faced by yet another view of another patio, right smack in the center of the house. From here, progress through the house is logical enough: nighttime areas are to the left, daytime areas to the right.

Fraser's plan is, basically, the familiar H-shape. The handsome manner in which he used the "bites" out of the H make his house unusually successful.

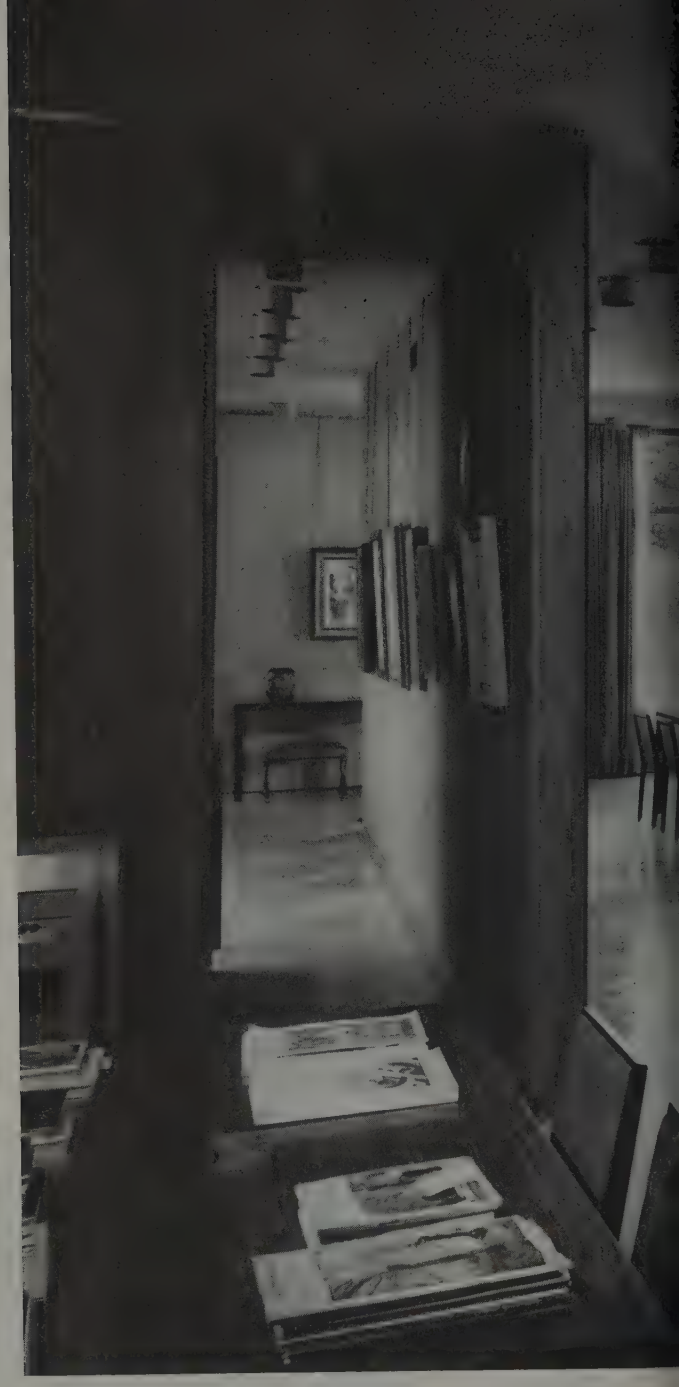
Sliding glass panels separate master bedroom from living patio. Since the patio is walled in on four sides, bedroom can be opened up completely without any loss of privacy.



front door

Living-room terrace faces west, is shaded by trees and overhangs. Stucco walls are chalk white, fascia boards light gray, brick panels are painted lavender or pink. Massive masonry is close in feeling to traditional Latin architecture.

LOCATION: Minneapolis, Minn.; PHILIP C. JOHNSON, architect; MAGNEY, TUSLER & SETTER, supervising architects, (Mearl E. Peterson, in charge); RICHARD KELLY, lighting; EIPEL ENGINEERING, structural engineers; JOHN DILLON, mechanical engineer; EMANUEL HOLM, general contractor.



What patios can do for your house:

Indoor gardens can

Photos: Warren Reynolds

pe a source of light

The main block of this spacious house is 55′ wide and 70′ long. To bring light and air into the center of so large a rectangle, Architect Philip Johnson carved a 450 sq. ft. patio out of the middle of the plan, turned it into a beautiful, glassed-in garden in the very heart of the house. This indoor garden does three things: it forms a focus of attention for all the rooms that open into it; it serves as a baffle between daytime and nighttime areas in the plan; and it is a source of light, by day as well as by night.

Granted that the central patio is a necessity in so large a house, its use even in smaller plans can add an unexpected dimension to more confined living areas.

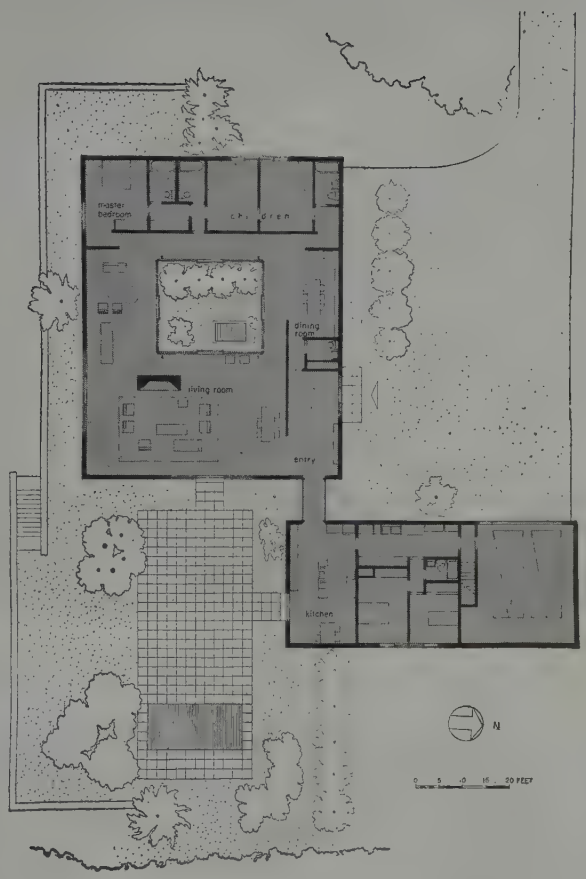
Brick is a brown Pennsylvania iron spot, once used extensively by Stanford White

Offset wings give form to outdoor spaces

While the central patio is the most dramatic feature of this classical house, it is a rather familiar and straightforward device. More subtle, perhaps, is the manner in which the two elements of the plan were offset to give form to surrounding outdoor spaces.

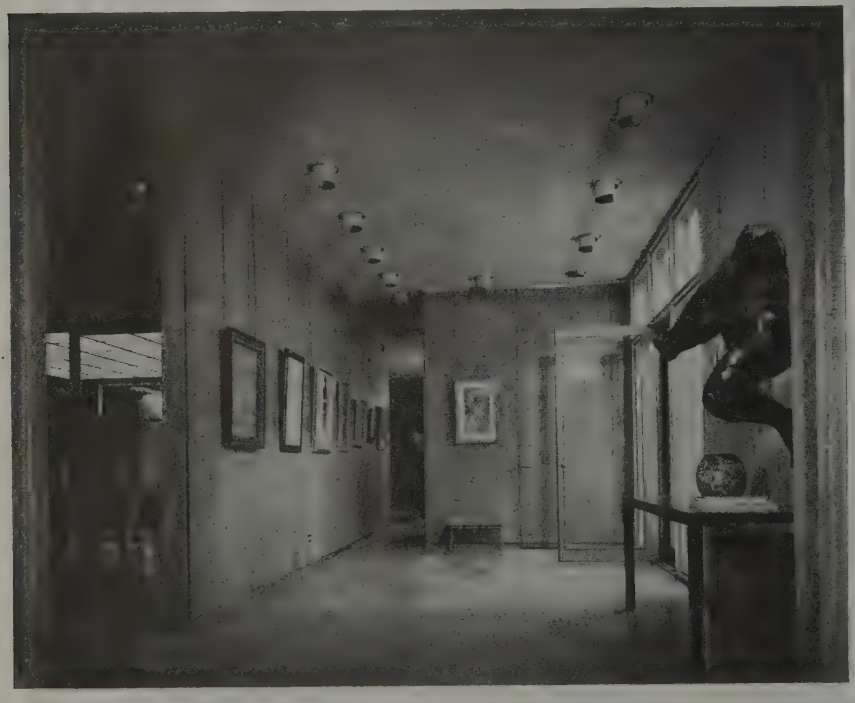
In the picture (above) there is a real sense of enclosure, repose, privacy. Yet much of this is suggested rather than real: this monumental terrace is screened on only two sides by the house itself; the other two sides are merely hemmed in by a low retaining wall, by the visual barrier of the pool, by a small clump of birches and by the rectangle of the limestone paving. In short, this is a classical "room" done in the modern manner: with walls on two sides, and with the mere suggestion of enclosure taking the place of massively walled-in space. On the approach side, similar means were used to suggest a formal entrance court.

Understated architecture of the sort practiced by Johnson is full of such subtle suggestion rather than blatant assertion, full of restrained effects rather than more obvious appeals. This house has a simple dignity that should see it through many years.



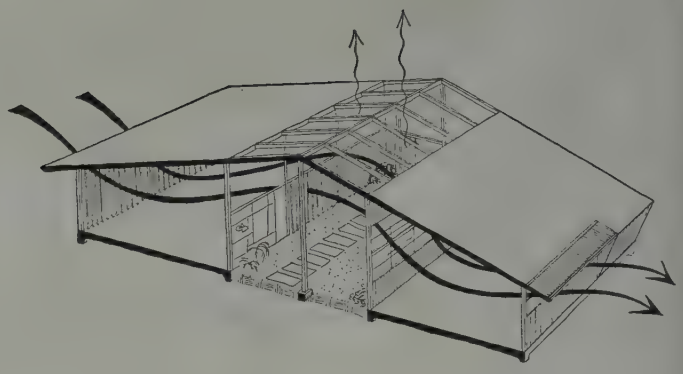
Floors are of Sicilian travertine throughout. Its color is that of wild honey. Steel was painted taupe

Owner is one of the leading art collectors in the US. Lighting by Richard Kelly was designed to serve paintings and sculpture. Furniture largely by owner. Main entrance is shielded by free-standing teak wall (below). Plan of house suggests some affinity to museum arrangements.



Central patio (opposite) has coffered ceiling of plywood, roofed over with corrugated plastic during winter months, insect screening during the summer. Daylight bulbs of 10 w. are concealed in coffers and supplemented by occasional spotlights to accent plants. Coffers cut out sky glare, conceal lighting fixtures at night. Artificial lighting assures that patio can serve as a major lighting source at night also. Ground covering is gravel. Part of glass enclosure slides open.

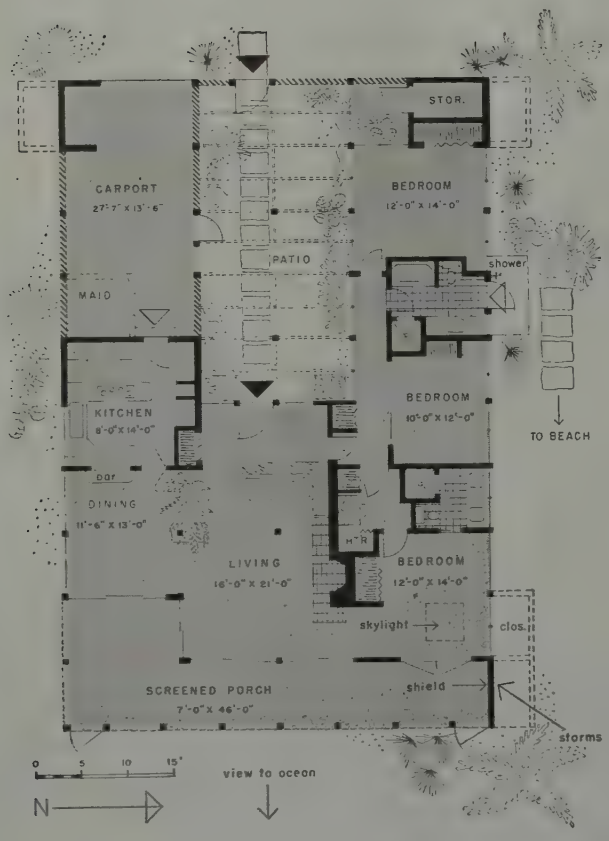
LOCATION: Atlantic Beach, Fla.
TAYLOR HARDWICK, Hardwick & Lee, architects
WEBB & DAVIS, contractors
AREA: 2,622 sq. ft. plus patio
COST: $10 per sq. ft.
Photos by Rada



South breeze flows through carport screening and louvers into patio, through bedroom windows and out north side. Warm air can escape through screening above court, making it a cooler place to sit at night than a covered porch.

What patios can do for your house

This patio wraps up fresh air and fun in a gay cocoon of color



Like many an architect who designs and builds a house for himself, Taylor Hardwick had a good time with this one. He had fun experimenting with structure, materials and color (see p. 117-118) and he made them perform some highly useful jobs, too. The patio is especially ingenious:

1. As an airshaft in the middle of the plan, it takes in the prevailing breeze and distributes it to living and sleeping areas (see diagram above).

2. As a light well, it gives the rooms around it natural light from inside.

3. As an entrance court, it provides a pleasant, gradual transition from street to living room, makes a small house seem bigger and more engaging.

4. As a sitting terrace, it is completely private from street and neighbors, sheltered against strong northeast winds and glare that sometimes strike the ocean-facing porch.

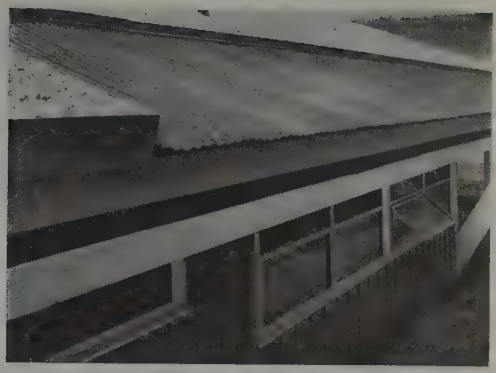
5. As a play pen, it is safely enclosed on four sides, can be supervised from most parts of the house.

6. As a screened porch, its blue-green, glass-fiber screening blends with the sky, keeps out bugs, filters the hottest sun.

7. As a greenhouse, the screening also keeps out frost, allowing the owners to grow delicate plants that ordinarily do not flourish this far north.

Front door opens into high entrance court. Awning windows (at right) may be left open during sudden rainstorms, are of colored and obscure glass, cutting glare of south sun. Door to carport (left) sports a cheerful Mondrian pattern.

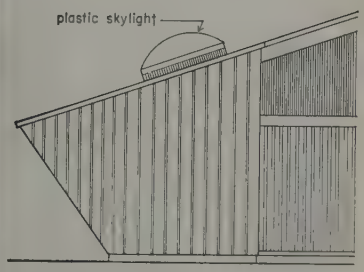
Building materials can be happy as well as practical



Corrugated plastic, reinforced with glass fibers, forms overhangs that keep off rain and sun but let in light. Over south side (above and below) is a 36′ strip cut from 100′ roll, green in color to "cool off" harsh sun before rays enter kitchen and dining room. On the north a 50′ length of yellow plastic lets in a warmer light.

Exuberant colors enliven front of house. Blue screening encloses patio; boards set at an angle in front allow privacy without stopping breeze. Hardwick says his airy structure was inspired by the open-slatted corncribs seen on Pennsylvania farms.

Yellow-brown firebrick makes up entire fireplace wall, with open space above to let breezes into bedroom at far left. Fireplace and heater vents of cement asbestos are brightly painted for accent. Multicolored panes toward screened porch soften ocean glare. Durable, easily cleaned floor is terrazzo, made of leftover chips of many colors.



Plastic bubble skylight 4′ square gives owners view of stars from their bed. On north side of roof, it gets little direct sunlight, does not heat up bedroom Swinging glass doors open to screened porch.

Photos: Chas. R. Pearson

Patio opens off all-purpose room, kitchen, living-room

What a patio does for this home-show house:

Outdoor living is centered

LOCATION: Tacoma, Wash.
ROBERT BILLSBROUGH PRICE, architect
SHERMAN ROWLAND, builder
TACOMA MASTER BUILDERS' ASSN., sponsor

This show house proves that a house doesn't have to be in the luxury class to gain from a well-planned patio. Everyone recognizes a bonus and the smartly integrated patio in this 1954 Tacoma Home Show house, which more than doubles its living space, helped to make it the talk of Tacoma.

Architect Bob Price gives much of the credit to the Tacoma Master Builders' Assn. (NAHB), its sponsor. Says he: "The really significant fact is the change in the sponsor's attitude toward the architect and modern design."

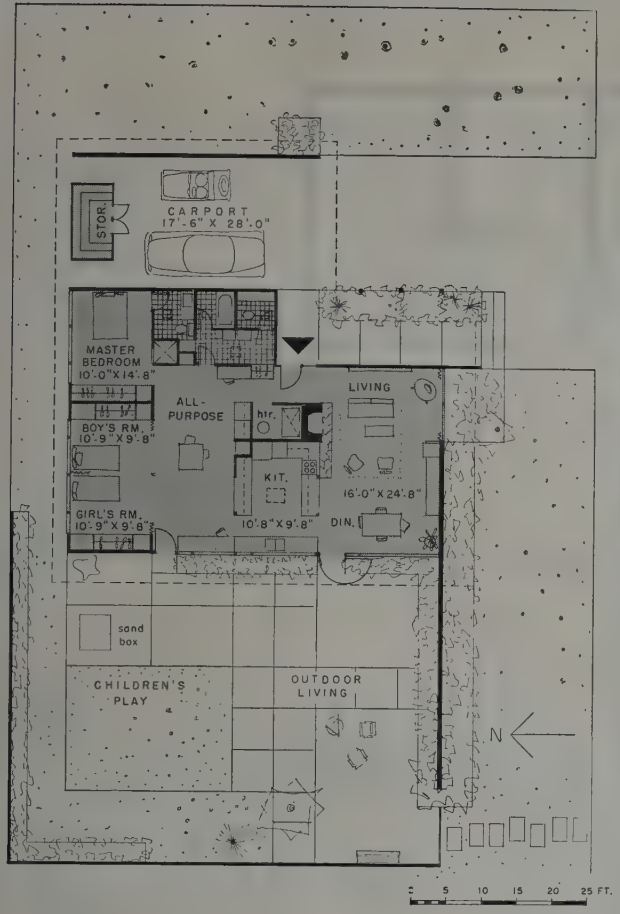
For the first time in the history of their home show, the association gave Price a completely free hand. Only requirements were low to moderate cost, simple details (for easy production), standard building materials. The house paid off for both builders and architect, sold two weeks before opening, attracted huge and admiring crowds, got the architect commissions for three more houses like it.

Other associations planning hundreds of home-show houses each year might profit from the Tacoma builders' new outlook and success.

What changed the builders' minds about design? Says Walter C. Witte, president of the association: "Outdoor living, contemporary design and open planning have captured the public's imagination. We wanted to capitalize on that and go the public one better by building up acceptance for what many may still think of as extreme design.

"Besides, we believe that contemporary design means more space for less money."

Price of the house: $17,500. Area: 1,550 sq. ft.

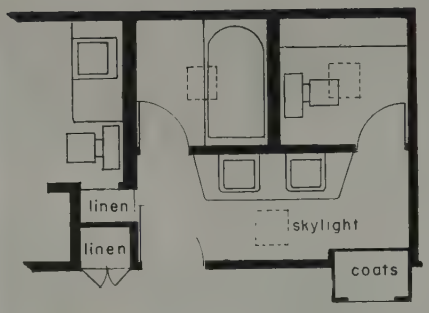


Patio is behind block wall (left). House is a forthright expression of plan and use. Nothing was used to make it look cute. All materials were chosen to give service, texture, color or interest to a particular area. Exterior finish, except for pumice block, is stained or brightly painted fir plywood.

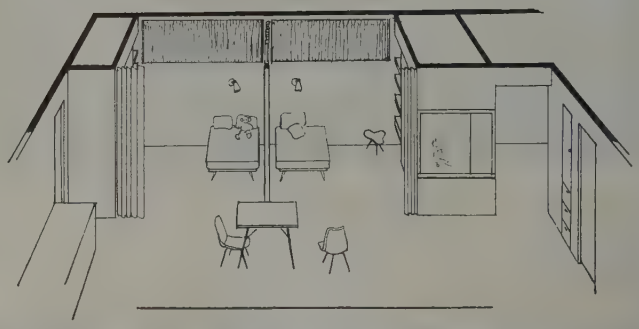
Shielded from street by long stretch of pumice-block wall, patio also extends a path of flagstone for outdoor entrance. Note high privacy fence (left).

in one accessible area

Oriented toward patio, main living-dining area seems to double in size, helped by pumice-block wall which makes smooth indoor-outdoor transition. Transom glass between beams also carries eye outdoors. Floor-to-ceiling window (left) commands driveway approach to house.

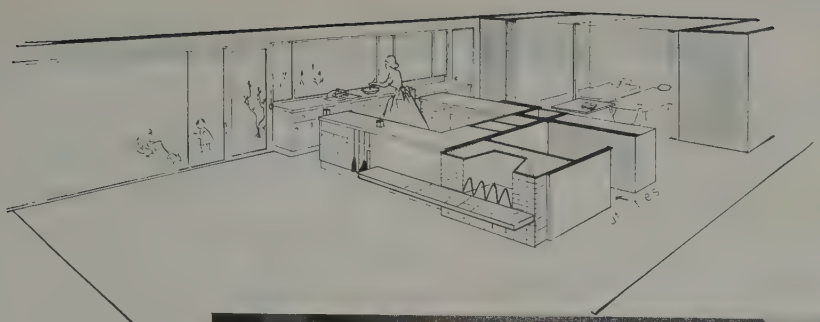


Double "T" bath for children and guests has bathtub at left, double basin at center, toilet through swinging door at right. Space under basins is economically enclosed with plywood for additional storage. Elongated medicine cabinet with sliding perforated doors puts toilet items within easy reach, and sliding doors will not bump heads. Room has no windows, gets light from skylights, ventilation from exhaust fans. Sensible compartmentalization of fixtures puts basins, most frequently used, close to door; bathtub is completely separated from toilet.



Convertible children's bedroom can be shut off from all-purpose room (right) and can be split in two by folding doors. Whole area provides space enough for a real indoor romp for kids. Other features that make the area livable for the little people; under gaily colored curtains, a perforated wall where they can hang their drawings, built-in storage wall of plywood with shelves, desk, wardrobe and drawers painted in many different colors. Architect Price planned house for "average" couple with young son and daughter, used tough materials that can withstand hard knocks. Example: fir plywood floor is covered with easily wiped asphalt tile throughout the house.

Almost half the area needed for this all-purpose room was saved by letting it do double duty as a bedroom hallway. This arrangement contrasts sharply with usual long, space-consuming corridor flanking three-bedroom-and-bath arrangement. Washer and drier are handy for servantless housewife who can also supervise children's play indoors or in patio. Cork and blackboard wall (left) is right outside children's bedroom. Master bedroom (through door, left background) has own bath, complete privacy, much needed for family with kids.



Even the kitchen shares the patio

Kitchen at the heart of the house (center background of photo below) rules the roost. Note from isometric how housewife mother can: 1) watch children in patio, or 2) in all-purpose room, 3) serve outdoor meals with a minimum of steps, 4) visit with guests in living-dining area even while cooking or serving dinner, or 5) enjoy the outdoor view herself. Open-plan kitchen (photo right) is planned to keep appliances out of living-room view; ceiling fenestration makes entire kitchen area light and cheerful. Counter-height range, built-in oven, pass-through are becoming modern necessities. Note how space is fully utilized for storage—much needed in today's kitchen. Cabinets with sliding doors above pass-through are fir plywood.

A scandals-twisted Housing Act

The new legislation will keep operative builders out of Sec. 207 rental projects. Warranty may hike home costs. Lower down payments, urban renewal cheer industry

Under all the circumstances—the headline-hunting of the FHA investigation, the blunderbuss attacks stigmatizing an entire industry for the long-known shady dealings of a few operators—the private homebuilding business could breathe a small sigh of relief that the Housing Act of '54 would at least leave its customary federal instruments in working order.

The measure—it had emerged from conference when these lines were written, with only the fight over public housing in sight—hobbled some phases of private housing. For instance, even the Congressional conference committee that gave it final form conceded the antimortgaging-out clause would keep operative builders from putting up any more rental housing under FHA's Sec. 207.

It was items like this—and the fact that the much-advertised liberalization of FHA Sec. 203 would actually leave operative builders worse off than under the old law (see p. 125) —that led one builder source to complain that the 1954 law was "worse than none at all."

None at all was still a faint possibility. The conference committee agreement (which two senators and three representatives refused to sign) called for only 35,000 public housing units for one year—plus the 33,000 already in the pipe line. The new 35,000 would be limited to rehousing families displaced by slum clearance, redevelopment and urban renewal. The House accepted the compromise, 234 to 156. If the Senate balked, the Housing Act would be recommitted to the conference committee, where it might possibly die in the adjournment rush. The chances were much better, however, for some sort of agreement on the politically explosive public housing issue. Nothing else stood in the way of the most comprehensive overhaul of US housing law in years.

Limited profits. A new philosophy for government-backed private housing was threaded into the GOP measure: limited profits. It was the outgrowth of FHA investigations into the whopping income some builders derived from 608s (see p. 35). But the concept was applied across the board. Thus the rechartered Fanny May, when it eventually becomes privately owned, would be limited to a 5% dividend. Builders under FHA's Sec. 207 and 213. the Wherry Act, rental defense and rental Sec. 220 and 221 housing. would be limited to a 10% profit—a situation immediately attacked by public housers as "guaranteed profits."

The Housing Act itself would not actually fix a 10% limit on builders' profits. It provided that a "reasonable allowance" for profit could be included in costs. But the conferees pointedly advertised that they had 10% in mind; that was the figure used in the committee report which backed up the Senate version of the housing legislation. There was every liklihood that FHA would limit profits to the 10%.

Antimortgaging-out. In limiting profits via antimortgaging-out amendments, the Housing Act would require builders of rental and cooperative housing to certify their actual costs (profit included) and then reduce their mortgage by the amount the loan exceeds the allowable *loan-to-value ratio.* Land would have to be listed at FHA's estimate of value before building. This was far stiffer than the cost certifications which had been imposed on Title IX defense housing and Wherry Act (Title VIII) military housing. These had required that any excess of the mortgage over cost be applied to reduce the loan. Yet even this relatively mild ban had brought the Wherry Act close to a standstill. Asst. Defense Secretary Franklin G. Floete told the House armed services committee recently: "Since the amendment of last year requiring sponsors to return any excess amount of the mortgage over costs, we have had only five new projects submitted. That law apparently has done it."

What would the generally predicted collapse of FHA's rental programs mean to construction of rental units in the US? Last year, said congressional housing aides, FHA accounted for 35,460 rental multifamily units, or 31% of the US rental total of 124,500. Only 7,451 units were FHA 207s. With the new legislative shackles, an FHA 207 loan now was likely to provide a builder with no more money than he could get conventionally, on a 66% of value basis. A conventional loan involves less red tape, no chance of being held up to public calumny. The suggestion for such a tightening-up was given Congress by witnesses representing big insurance companies—a big source of conventional rental unit loans.

Byrd & barbecue pits. Two other major categories of law-tightening also stemmed from the FHA scandals: restrictions on Title I repair loans and a watered-down version of the amendments urged by Sen. Harry Byrd (D, Va.). For Title I, President Eisenhower had asked that the loan ceiling on one-family homes be raised from $2.500 to $3.000, the amortization period from 3 years, 32 days to

IN THIS MONTH'S NEWS

(see pp. 33 through 48)

Senators haul 608 builders on the carpet as a long probe into alleged windfall profits begins in Washington

Steel price boost foreshadows higher building costs although some builders think housing may escape—at least for a time

Congress gives HHFA dictatorial power to reorganize FHA and other federal housing agencies

$5,000 worth of electrical appliances per house in ten years? Industry executive forecasts it will be so

John Lloyd Wright and California architectural examiners tangle in a court test of the state's controversial registration rules

5 years, 32 days (with similar boosts for multifamily dwellings). Congress left both loan limit and pay-off as they were. Moreover, it changed the entire concept of Title I loan insurance. From now on, instead of full insurance up to 10% of his portfolio of Title I repair loans, a lender would get only 90% insurance of each loan. That promised to drive some lenders out of the program, even though FHA may ease the blow by cutting its insurance premium (FHA makes big profits on Title I repair loan insurance). Only supervised and approved lenders would be eligible to make Title I loans—a blow to careless lending practices. And the work would have to "substantially protect or improve the basic livability or utility of the property," thus ruling out barbecue pits, swimming pools, patios *et al.* No repair loan could be made until a house is occupied for at least six months, and multiple loans on the same property must not exceed the authorized $2,500 total.

What the industry regarded as the most threatening Byrd amendment (all were inserted on the Senate floor) was dropped. It would have required lenders to certify that any FHA-insured loan they made was "sound." The problem: if a loan went sour quickly, FHA might charge the lender with fraud and try to cancel his insurance.

What survived of Byrd's amendments were 1) a diluted requirement that multifamily mortgagors and public housing authorities keep such records as FHA or PHA order and agree to audits, and 2) a requirement that HHFA show in annual reports how all its loans, grants and capital contributions stand and how much individual builders have paid in to reduce mortgages under the new anti-mortgaging out rules. Other tightened features of the law:

Warranties: Rep. Albert Rains (D, Ala.) won his two-year fight to force homebuilders to give a warranty on all FHA and VA one- to four-family housing. Builders won an important last-minute concession when the conferees agreed to require only a warranty that homes are in "substantial conformity with plans and specifications." The Senate version of the law had required a flat warranty of "conformity." Both NAHB and top federal housing officials warned this was too stiff to work.

No FHA 'hotels': For years, US hotel operators have been crying that many FHA 608s—accepting transient guests and offering "hotel" services—were giving them unfair competition. They won a partial victory in the new law. No FHA project may be run for transients unless it had written approval from FHA to do so before May 28. Sponsors of rental projects will be required henceforth to swear under oath that they will not take in transients. Moreover, the law would let hotel operators within a 50-mi. radius of an FHA multifamily project sue for an injunction to halt any alleged violations.

The new law also would make it a criminal offense to misuse the term "FHA" in advertising or promotion. It would let FHA and VA exclude "willful" violators from their programs.

Lower down payments. The big plus in the legislation was easier down payments, and the near-equalization of FHA terms for new and old homes. The law would boost the mortgage ceiling for FHA Title II loans on one- and two-family homes from $16,000 to $20,000. For three-family housing it would rise from $20,500 to $27,500. For four-family housing, it would go up from $25,000 to $35,000. The act would permit owner-occupants to get FHA mortgages up to 95% of the first $9,000 of appraised value and 75% of the value above that. *(Thus on a $9,000 house, only $450 down would be required; on a $12,000 house, only $1,200; on a $15,000 house, $1,950.)* Operative builders, however, would be entitled to only 85% of the down payment terms *available to owner-occupants.* This leaves them worse off than the old law (except for houses priced over $12,000). Builders had been getting 85% of the full valuation.

In making the lower down payments mandatory, Congress went further than President Eisenhower had asked. He had urged that these be made permissive as an antirecession weapon. Along stabilization lines, Congress voted the President power to permit 95% loans up to $10,000 if he feels the economy needs it.

The legislation covering FHA terms on existing houses was expected to broaden the market and perhaps boost prices. The law would permit 90% loans up to $9,000 and 75% of the excess (up to the ceilings governing new FHA houses). But loans would be restricted to 30 years *and* to three quarters of the remaining life of the structure as estimated by FHA.

The Title I, Sec. 8 program was merged with Title II. Although FHA has said it will retain lower construction standards for mortgages of $6,000 or less, prefabbers who have seen some of the proposed standards fear the land development requirements will be too stiff. Other aspects of the law the housing industry sees as gains:

Open-end mortgages: FHA was authorized to insure open-end mortgages on one- to four-family houses (VA already does). Particularly since Congress refused to ease Title I repair loan terms, the industry is counting on open-ending to give the modernization market a shot in the arm. A last-minute controversy over Senate objections to letting additional advances exceed the original amount of the loan was settled by a compromise under which the mortgagor must certify that anything above the original loan total "will be used to finance the construction of additional rooms or other enclosed space. . . . "

Urban renewal was one of the act's most sweeping changes — but little noticed lately because of the FHA controversy. Title I redevelopment of the Housing Act of 1949 would be broadened to include not only slum clearance but slum prevention and the entire new concept of urban renewal. Significantly, the law would bar urban renewal grants (but not preliminary planning advances) to communities until HHFA approves "workable" official plans to attack existing slums and prevent growth of new ones. But city councils would be required to pass an ordinance or resolution before planning funds can be granted. This would close the door to many a stunt by which public housers flim-flammed projects through before cities understood what was happening. The new law would repeal the requirement that blighted commercial or industrial areas be redeveloped primarily as housing, but would still bar capital grants for open-land projects.

Military housing: In a new FHA section created for military personnel some homebuilders might find a little-suspected bonanza. It would be the most liberal government housing insurance ever legislated. The maximum mortgage of $17,100 would permit 95% loans on homes priced up to $18,000 (instead of $9,000 for civilians). Apparently, the new section also applied to existing homes—if sold to men or women on active duty. Moreover, a soldier who gets the new FHA-military loan would still be eligible for a VA home loan after he is discharged.

The law also would extend Title VIII and Title IX for another year—subject to overriding amendments like mortgaging out.

Fanny May: The housing measure would give the President almost everything he sought in reshuffling the Federal Natl. Mortgage Assn. (H&H, March '54, p. 35). Basically, this involved revamping it into a tripronged operation part of which is destined for private control in some six to 12 years. Fanny May's "normal secondary market" would be gradually shifted into private hands, and people who sell mortgages to it would be required to buy capital stock amounting to 3% of the mortgage—a percentage builders think is too high. While the government retains its initial $70 million stock in the operation, dividends on the stock might not exceed what the government gets on its own securities. After the government is paid off, the yield would be held to 5%. And private participants would be barred from receiving any dividends based on earnings with the government's money.

A second Fanny May operation (with separate accountability), treasury-financed aid to new mortgage programs, would have only $200 million authorization, plus $100 million for 20% participation loans. Theoretically, these might raise the kitty to $700 million to back items like low-cost or minority housing. Advance commitments under the one-for-one plan could not be revived until participants have paid some private money into Fanny May and will be limited to the amount of these mortgages. This would make the one-for-one provision almost worthless. Third Fanny May program: sell its existing $3.6 billion portfolio.

Voluntary credit committee: Creation

of a Natl. Mortgage Credit Extension Committee to help steer mortgage funds into money-shy areas was authorized, under HHFA auspices. The committee was proposed by insurance companies, is aimed at making direct VA loans needless. For a time, the conferees were going to bar mortgage bankers from taking part in this work, but the committee relented.

High-rise apartments: For Sec. 207 apartments with four or more rooms, the act would remove the $10,000 mortgage limit and give the FHA power to up the mortgage ceiling for elevator structures from $2,000 to $2,400 per room and from $7,200 to $7,500 for family units of less than four rooms. The same increase would apply to Sec. 220 elevator apartments. The new **FHA Sec. 220**—for either old or new dwellings in designated urban renewal areas—would have the same financing limits as 203 for one- to four-family homes. The maximum mortgage amount for each unit over four (and not exceeding 12) was fixed at $7,000.

Eisenhower's brave new plan for 100%, 40-year loans **(FHA Sec. 221)** was amended into uselessness. It had been proposed as a try at a private enterprise substitute for public housing. Congress limited it to 95% loans for 30 years—just the same for cheap houses as would be available under Sec. 203. The White House also lost completely its effort to get flexible controls over FHA and VA interest rates. Spurred by cries of alarm from the veterans' lobby, Congress left intact the present rigid ceilings (5% for FHA, 4½% for VA). It also forbade FHA from changing the interest rate on its debentures after the insurance contract as the government bond market fluctuates.

Some proposals dropped in conference:

- A section calling on the Budget Bureau to study feasibility of combining field processing of VA and FHA.
- A Senate amendment authorizing Title I loans for mobile trailer coaches.
- Broad language (by the House) to make an anti-Communist rider apply to all federally aided housing; public housing, however, remains subject to the requirement.
- A Senate plan to aid the fight against smoke pollution of cities by a $5 million research program under the Dept. of Health, Education & Welfare and $50 million for loans to industry.

Cement strike ends in East; 15¢ bbl. price boost seen

Cement again was flowing freely into mixers along the eastern seaboard last month following settlement of a two-month strike of AFL cement, lime and gypsum workers. Contracts approved by memberships of locals in the plants of five major cement companies provided for a 5¢-an-hour increase from an average pay of $1.50 to $2.00 an hour, effective with return to work. Also provided was pay for holiday work at two-and-one-half times the straight rate. Cement users in the east expected a price rise of 15¢ a barrel in September, following the pattern of a similar increase a month ago in the Midwest and South.

Northwest lumber strike

Some builders slow operations to avoid paying fancy prices for lumber and plywood as biggest lumber walkout on record drains Douglas fir from supply pipe lines

A strike in the Pacific Northwest lumber industry, source of one third of the nation's softwood lumber, seemed almost unthinkable in mid-June. Lumber is the Northwest's biggest and oldest money maker; 65¢ of every dollar of income in Oregon comes from lumber. As residential building had picked up, lumber buying had quickened, and fir prices had risen $5 a thousand board feet at the mill. And employment was on the rise in the Northwest after a slow winter.

But on June 21 lumber workers came out of the woods and mills by the thousands, and in a few days lumber users across the nation were bidding up prices in a scramble for dwindling stocks. Homebuilders were threatened with a shortage of dimension lumber at the height of the busiest season since 1950.

Two rival unions—the CIO International Woodworkers of America and the AFL Lumber and Sawmill Workers Union—had joined ranks for the first time in the biggest lumber strike yet.

As they glared at each other across the bargaining table, representatives of the 100,000 workers and 465 lumber-producing operations (over half the producers in the Northwest) were beginning to wonder what they were doing to the already troubled lumber industry. The Douglas Fir Operators, a management group, was warning the strikers—and the public—that increased wages of any amount, not to mention the 12.5¢-an-hour boost sought by the unions, would mean shut downs for many producers.

Log-choked river. Around Portland, main artery for outgoing Oregon shipments, lumber was piled up by the carload on docks and mill grounds. Acres of idle log booms choked the Willamette River upstream. The Kingsley Lumber Co., a sawmill in Linnton, Ore., had 3.5 million board feet of Douglas fir sitting behind picket lines.

But wholesalers by mid-July were down to their last stick in Portland. Some were heading south to California to beat the bushes for more. Contractors, who had been enjoying a nice little boom lately, began laying off carpenters.

By mid-July lumber prices—which had shot up as much as 30% above prestrike levels—had started to settle back down as builders in increasing numbers decided to wait out the shortage. Some, wary of a price-conscious market, slowed work in several eastern and midwestern cities.

How long this would last was a matter of conjecture. It is customary at this time of year to close down lumber operations for overhaul, and to give the men a two-week paid vacation. The strikers intelligently walked out pretty much at the start of that period, may have enough loose cash to tide them over a while. But with the highest wages in the US lumber industry, Northwest workers have been buying heavily on the installment plan. Money for payments, already tight after a bad winter in which loggers could not get into the woods, will soon be tighter. Yet many were predicting a long haul, possibly two strike-bound months, a very serious disruption of management and labor income. Using the steel settlement as their biggest pitch, the unions asked a strict across-the-board raise of 12.5¢ an hour above their present average of $2.64 for loggers and $2.06 for sawmillers.

High wages. The steel average is $2.16; the average for southern lumber workers (the other great source of US lumber) is only $1.16. Moreover, and most important for selling purposes, the unions argue the fact that Northwest lumber workers have not had a raise since April '52, when a one-month walkout got them a 12.5¢ hike.

The only raise in the interim was a 5¢ boost last year by the Weyerhaeuser Timber Co. for its own men, which caused the rest of the industry considerable annoyance. Weyerhaeuser, the biggest single, integrated, forest-products producer in the US and the only one which negotiates apart from the rest of the industry, acted to forestall a 10¢ strike. Last month, Weyerhaeuser, caught with about 8,500 men out, was simply waiting mildly for the rest of the industry to settle the fuss.

The strike was far from popular with the rank and file of the unions, especially in plywood. In that industry, cooperative plants, not closed by the strike, were stepping up production. These worker-owned plants, which own no timber and are for the most part undercapitalized, were getting a new crack at the market. Normally they supply about 20% of the nation's plywood, but it appeared possible that if their competitors stayed struck a while longer, the cooperatives might capture another 5% of the market.

Industry seemed in no hurry to settle. Said one industry spokesman: "We're just going to relax and rest up for the big battle ahead." It was the view of management that the union determination to get a raise "come

hell or high water" was profoundly unjust. It was management's position that in 1952 when the 12.5¢ raise was effected, the price of fir lumber had reached a peak of $81.48 per million board feet. By January of this year the price had fallen to $66.68. In 1953 the price of plywood was $90. Before the strike it was $76. Management held that for an already troubled industry, increased wages mean only one thing—shut downs.

Unions pointed out that the cost of living had gone up 2% since 1952, that more lumber was being produced in less man-hours. Replied management: "Our only chance of survival is capital investment in new techniques and processes which, though they may put some men out of work, must come about." Already, since 1950, this trend has cut almost 10,000 lumber industry jobs.

Shake-out pains. The plain fact was that the lumber industry, if not exactly in dire straits, was nevertheless going through considerable growing-up pains in this age of great corporate units. Of the 53,109 active US sawmills, 98% produce less than 5 million board feet a year. The vast majority of sawmills are very small operations, highly competitive and at the mercy of frequent price swings and high labor costs. This is a result partly of the historic US splurges in consumption of timber, which lure hordes of small "gyppo" operators into the field, only to see them fall when the first squeeze comes. An additional factor is that few operators have facilities for processing and selling all the by-products of an entire tree. With a paucity of gigantic producers, like Weyerhaeuser, or specialists like International Pulp & Paper, the lumber industry is most especially a profitable business for the manufacturer big enough to achieve product diversification, or the wholesaler who can round up the by-products the "gyppo" is not solvent enough to make out of his timber.

"The more you cut, the more it costs," is the way one leading banker in Seattle put another great lumber dilemma: the industry is steadily running out of trees despite the strong current for conservation measures which date back to Gifford Pinchot. Loggers must now go farther into more inaccessible spots, make longer hauls. Equipment must be steadily improved at greater expense to make more use of a lot more pieces of logs to get the same footage. Annual production is about the same now (10.2 million board feet) as in 1926.

An importing nation. Despite the fact that the US produces about 45% of the world lumber supply, it imports more than it exports. In 1928 the US exported a net of 3.2 million board feet, but in 1952 it imported a net 2.5 million. Canadian and Scandinavian producers with plenty of wood, drastically cheaper labor costs and low-cost shipping are stealing the market. Lumber shipments from British Columbia to the Atlantic Coast increased about 25% from 1952-53. From Oregon and Washington they decreased about 2.5%.

Perhaps the biggest single hard knock has come through the growing array of new building products such as aluminum. Window frames and doors for instance were once one of the biggest income-producers for lumbermen. Now, more and more are being made of hardy, relatively cheap aluminum—or of steel. And the highly successful salesmanship shown by the aluminum industry contrasts with relatively poor promotion shown by lumbermen. Now, plywood men are readying a major step-up in sales promotion. One item: the Douglas Fir Plywood Assn. plans to double its sales force to promote plywood among builders with the slogan "builds better at lower costs."

Gyppos vs. new ideas. Into this changing situation have been sown a plenitude of good new ideas for the uses of timber by-products—cheap acoustical tile from wood fibers, rayon, plywood—a use, say foresighted lumbermen, for "everything in the tree but the breeze." Brightest of new thoughts are tree farms, 23 million acres since 1940. But the sad paradox in this new development is the glut of tiny producers (the "gyppos") whose facilities scarcely are the place for advanced wood chemistry. More and more, the harsh truth seems to be that the future lies in the hands of great units.

The strike brought one ironic, though short-term, blessing for the little crossroads mill—zooming prices. Mills (including some co-ops) that had been on the edge of bankruptcy were coining enough profit from the strike to repay mortgages and debts for logs. Some experts have forecast this financial bail-out almost guarantees a continued oversupply of lumber, especially plywood, for at least another year.

While some small operators signed early sweetheart pacts with unions for raises as high as the 12.5¢ demand, others persuaded their men to go back to work with no raise at all. But the dominant management attitude is summed up by one small operator who said last week—"I lost money last year. I absolutely cannot and will not give them a raise."

Said a striker in Roseburg, Ore., center of the biggest timber stand in the US—"I can keep paying for the car if this thing ends in three weeks. After that . . . well, the house is paid for, anyway." A retailer in the same town estimated sales were off as high as 70%. A haberdasher in Portland said his sales were off 15%.

What will be the long-term effects of the strike? On July 1, Portland's independent Republican newspaper, *The Oregonian*, analyzed them this way:

"The big steel wage settlement, providing a 5¢ wage increase, puts unbearable pressure on other industries in which an effort is being made to hold the cost line . . . but steel has the nation in an arm lock, while lumber can exert no such pressure. Steel contemplates an immediate increase in price perhaps averaging $4 a ton. Lumber prices are wholly competitive with other building materials and subject to fluctuations in construction. Prices for Douglas fir have moved up . . . but there is no assurance that they will remain there when production is resumed. Each day that Northwest mills are down, former markets are supplied and perhaps lost for good to lumber from nonstruck and foreign producers. The effects of this walkout will last a long time . . . the longer the delay, the worse off the industry will be."

Griffin

San Diego considers a ban on 210 sq. ft. homes

The question before the San Diego city council was whether such 14' x 15' structures like the above constituted a threat to property values and consequently whether a minimum-size zoning ordinance should be enacted to forbid their construction. Argument on both sides was spirited. A. R. Essery and Edward Tristran touched off the hassle by putting up ten of these houses—210 sq. ft., with tongue-and-groove roofing, interior partitions that do not reach the ceiling and one door. "A shame and a sin," said one local NAHB official. But outbursts from some small-home builders and beach property owners were loud and the city council voted down the proposed ordinance change, 6-0. The buildings fit the slim state law, which sets minimum measurements only for bedrooms (80 sq. ft.), bathrooms (30-35 sq. ft.) and kitchens (50 sq. ft.). City Planning Director Glenn Rick plans to present a compromise ordinance for consideration by the council this month (it has twice been postponed) putting local home sizes—variable according to the zone in which they are built—at 400 to 650 sq. ft. for single-family homes, 400 to 500 sq. ft. for duplexes and 250 sq. ft. for apartment and motel units.

Austin, Tex. is the new air-conditioning capital of the US. It may have fewer air-conditioned houses than Houston, Dallas or Phoenix but it has more types of cooling equipment and more new ideas on air conditioning than can be found in any other city.

Hundreds of builders, designers and engineers from the building industry will travel to Austin in the next few months to see the 22 houses which make up NAHB's big field-testing project. For in this one Texas city NAHB's Research Institute has brought together equipment and ideas that represent most of the progressive thinking about summer cooling.

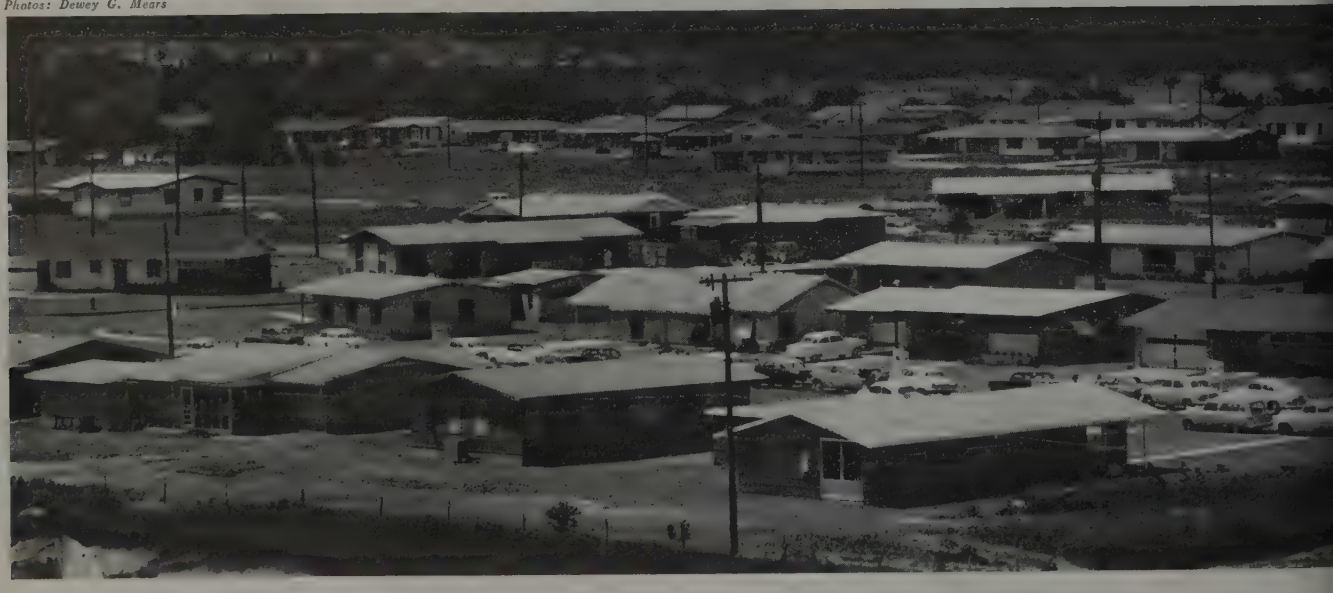
To those who cannot go to Austin for a personal inspection, HOUSE & HOME offers this 16-page report as the next best substitute.

What can you learn about summer cooling from NAHB's

Air-conditioned Village

On opening day (left) some 500 visitors representing the building and air-conditioning industries went to Austin to see the 22 experimental houses (below). NAHB President Dick Hughes said: "Our responsibility as builders is to produce more and better homes for more people. Without year-round air conditioning, no home can be comfortable."

Photos: Dewey G. Mears



NAHB's men: Ned Cole, Len Haeger, Earl Smith, Dick Hughes

What is Air-conditioned Village? Twenty-two houses plus an NAHB field office located in the new Edgewood residential area northwest of Austin. Houses are lived in by families who paid an average of about $15,000 for them. Each house has a different make of air-conditioning system. Houses are approximately the same size: ranging from 1,146 to 1,468 sq. ft. plus carport and outdoor storage. Families began moving in last June.

Who built it? Eighteen local builders, all NAHB members, at their own expense. Most used their standard 1954 house or a slightly modified production model; a few houses were freshly designed for this project. The majority of builders worked out the installation of their air-conditioning systems in cooperation with manufacturers or local dealers.

Who is behind it? NAHB, strongly backed by President Dick Hughes, Chairman Earl W. Smith of the Research Institute Committee, Leonard Haeger and Chris Christenson of the Washington office, and supervised in Austin by Ned A. Cole, chairman of the Air Conditioning Committee. Sponsoring it also are the National Warm Air Heating and Air Conditioning Assn., the residential section of the Air-conditioning & Refrigeration Institute, the National Mineral Wool Assn., Structural Clay Products Assn., 22 air-conditioning manufacturers and about 30 firms making other housing products.

What is its purpose? For one cooling season and one heating season the houses and the families in them are to serve as a field laboratory. It is hoped that investigators can get answers to many questions which will lead to the improvement of cooling-equipment installation methods and to summer-cooling use by typical families who buy merchant builders' houses.

Each house has a separate electric meter for the air-conditioning unit so that operating costs can be recorded and analyzed by University of Texas engineers. Practically every type of cooling equipment, air-distribution system, insulation and shading device is used. From instrumentation and observation many important facts can be learned (see the following pages).

Is the Village open to visitors? Village families have agreed to open their homes one day a week to qualified observers. For information write to NAHB Washington office, 1028 Connecticut Ave., Washington, DC. Reports will be issued by NAHB's Research Institute at a later date.

ee these pages for:

1 wide overhangs,
2 light-colored low-pitch roof,
3 plenty of windows, properly located,
4 carport or garage to shade west side,
5 other devices to keep sun off windows,
6 ventilated attic (some have electric fans),
7 thoroughly insulated attic,
8 wall insulation,
9 moisture barriers,
10 exhaust fans in kitchen and bath,
11 a variety of locations for cooling units, carefully engineered,
12 air-distribution system designed to fit the house.

These points, illustrated by house (above), contribute to cooling and good design, are repeated in all 22 houses

What's good for cooling is good for design

Testing! Air-conditioned Village is a laboratory. Nat'l. Warm Air's field car is only one part of the testing facilities that Bill Nessell's crews are using this summer in Austin. Technicians, like man at right, will check temperatures, air flow, effectiveness of each installation and design.

Photos: Dewey G. Mears; LIFE—Loomis Dean

Do children eat better in air-conditioned houses? That is one of many questions medical investigators will try to answer as they call on Village families to check human reactions. Summer cooling is still so new that how it affects family living is comparatively unknown.

Air conditioning improves design. The 22 test houses demonstrate that a house designed for air conditioning looks better and performs better than the average uncooled house. Factors that make a house cooler in summer also make it a better year-around house. A wide overhang on all four sides, for example, makes almost any house look better and bigger, provides shade and protection from weather for the wall below, casts little shadow in winter.

Proper shading of windows reduces sky glare, makes indoor living more comfortable. Proper location of windows for air conditioning reduces summer sun load whether or not the air conditioning is operating. A house well insulated and with efficiently designed moisture barriers is a more comfortable place during cool days of spring and fall as well as in the middle of winter.

Such companion factors of air conditioning as ventilated attics, kitchen and bath exhaust fans, carports or garages on the west or east to provide shade, trees and shrubbery to cool east and west walls, and the proper venting of clothes driers and other heat and moisture-producing equipment all contribute to better family living.

Houses are experimental and not 100% perfect. A perfectionist, seeking the ideal house for air conditioning, will not find the perfect house in Austin because of several limitations imposed on the project. Ned Cole's air-conditioning committee was severely pressed for time and with so few people to do so much work it is a miracle that the Village was finished by opening day, June 2. Orientation is not ideal because houses had to be located in an established subdivision which already had streets and utilities.

There was a practical limitation on house design because not only were builders in a hurry, but they had to produce designs they were sure would sell in Austin and which would meet VA-FHA and lending institution requirements. Unlike Parade of Homes houses which sometimes stand unsold for months, these houses had to sell fast so families could move in and the testing program could be started.

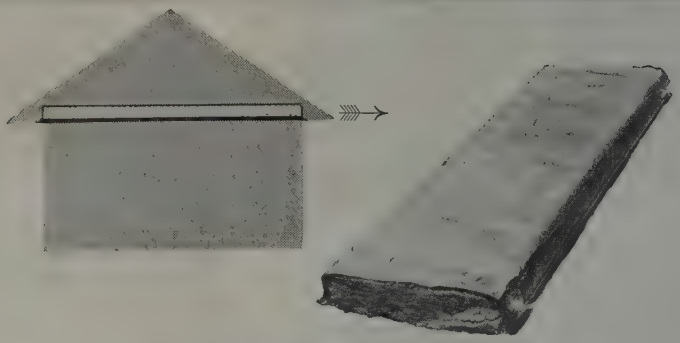
There were also size and price limitations. The committee asked builders to produce a house of approximately 1,200 sq. ft. which would sell for $12,000 plus the land. While this was a target, some houses were priced up to $17,000 because of extra equipment and their experimental nature.

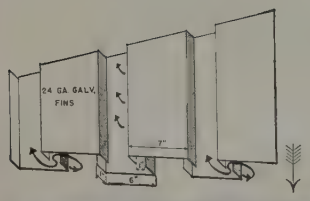
One of the ground rules laid down by NAHB's Research Institute was that each house be designed for a cooling load of approximately 2 tons. Houses in the raw had such variation in orientation, window area and other factors affecting heat gain, that it was necessary for the committee to equalize the cooling load by adding extra amounts of shading and insulation. It is emphasized that this is not a comparative test of different cooling units. Nor is it a laboratory type of research in which the essential elements are controlled. The fact that the 22 houses are different, the units are different and the families are different will provide a rich source of subject matter for observation. It is unfortunate that all the good ideas were not combined in at least one house as a demonstration of how good a house can be.

Field tests will be made by experts. Already at work are skilled technicians from the National Warm Air Heating & Air Conditioning Assn. under the direction of Bill Nessell. This is the third summer these field crews have been checking the efficiency of cooling systems. They will measure temperatures in each house at 3" from the floor, sitting height, standing height and at the ceiling. They will measure slab temperatures, room humidity, effect of intermittent fan operation and take thousands of other recordings. There will be a careful record of operating costs. Houses have been so well insulated and shaded that some builders hope their owners will be able to heat and cool all year for $100. Aim of the research is to discover how better cooling and distribution systems can be built and installed for less money.

Families, too, will be studied. Physicians from the Texas Medical Assn. will see families periodically to determine how a cool house influences allergy sufferers. University of Texas psychologists will study how air conditioning affects the mental health and spirits of the occupants. Other studies may be made.

Is air conditioning practical for the $12,000 to $15,000 house? Residential air conditioning in merchant builders' projects is so new that many observers are still uncertain if it is economically practical in houses at $12,000 to $15,000. FHA and VA officials are also watching the Village.





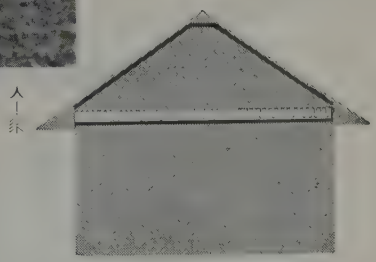
New insulation of mineral wool is topped with a silver-coated reflective paper that bounces back about 80% of the intense heat rays normally radiated to ceiling from a hot roof above. This paper should make a 3 " "full thick" batt as good as 5" of regular insulation in summer. In winter, reflective paper is of little value. Under mineral wool is regular aluminum-foil vapor barrier. Cost of "full thick" size just introduced by National Gypsum: about 10¢ a sq. ft. installed.

Fully vented gables in Village house (left) emphasizes importance of good air wash of ceiling to prevent heat from building up in attic. Prefabricated metal gable is shown in sketch. Experts recommend as much as 1 sq. ft. of free vent opening at each gable for every 200 sq. ft. of attic. This helps cool in summer, also helps prevent condensation in winter.

The white roof reflects from 35% to 70% of sun's heat, depending on roof texture and material. Engineers still do not know exactly how efficient a white roof is, so this one may supply important data. However, major emphasis in Village roofs was placed on insulation and vented attics.

New roof and

Photos: Dewey G. Mears



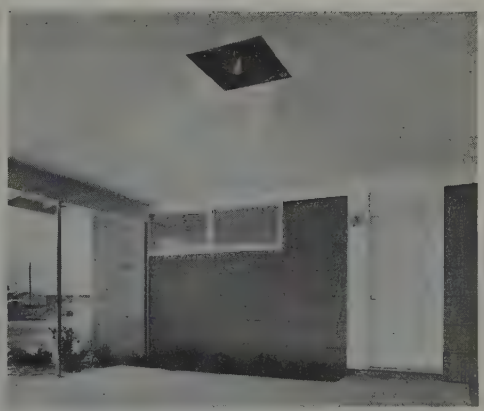
New insulation method combines advantages of aluminum foil and bulk insulation. Single-foil sheet, tacked under rafters, not only stops roof heat from radiating to ceiling below but also provides a heat shield over cooling equipment in this attic. Usual 4" of bulk insulation was blown in over ceiling. Both attic and space above foil is well vented.

. attic ideas cut heat load

What happens under a hot roof on a 100° day? No one knows all the answers to this question now. A lot more will be known at the end of the summer when first results are in from the Austin experiment. In an attic temperatures may reach 150° or more on a hot day and most of this heat radiates down into the house unless the ceiling is well insulated. Roofs and attics in the Village houses have been designed to provide a variety of conditions so that the value of roof colors, roof finishes, insulation and fans may be tested.

These are the most thoroughly insulated roofs and attics that have ever been built. Even a brand-new kind of insulation is used for the first time. It is mineral wool with a silver-coated paper on top and an aluminum-foil vapor barrier on the bottom (see photo and drawing opposite).

Some attics are insulated in a new way, with a layer of aluminum foil tacked against the rafters (as shown in the photo above). Several houses make new use of 24" attic fans to keep air flowing through the attic.



Forced ventilation over ceiling is being tested with 24" attic exhaust fans, thermostatically set to start when attic air is 100°. At left, fan blasts attic air out gable; replacement air is pulled in other gable. Fan above draws powerful airwash in through vented gables, out through carport ceiling. In no case is air inside house affected. Fan costs about $70.

Big overhangs are a standard feature, provide shade and generally improve appearance of houses. House above has a generous overhang at right end, plus an unusually large carport roof which serves as buffer between house and afternoon sun. Designers put carport at west end of house whenever possible but orientation often made this impractical.

Shading reduces the huge sun load on windows

Most designers of air-conditioned houses have completely overlooked the importance of shading devices. The variety of shades and their effectiveness in cutting direct sun heat through windows should contribute important data for future houses. Test results will undoubtedly show that air-conditioned houses can have plenty of windows if they are properly shaded.

The rich assortment of shading devices includes roof overhangs, wood trellises, awnings of canvas, aluminum, steel and plastic, wrought-iron grillwork, wood shutters, reflective metal screens, double-glazing and heat-absorbing glass, sun wall extensions of carports, and the use of carports or garages to shade entire sides of houses. All these devices are just as effective in making a nonair-conditioned house more comfortable as they are in cutting the cooling load on air-conditioned houses.

Grandpa was right when he used canvas awnings to shade his windows, for this is a practical way to cut sun loads. On other houses metal or plastic awnings were used for the same purpose. Builders' model houses should be equipped with awnings or shading devices to suggest their use to buyers. Signs might be used to explain their Btu value.

For vertical or horizontal shading, these canvas awnings do an efficient job. At left, awnings are swung up to extend roof over terrace, but as sun gets lower they can be lowered too (as shown at the right). When big windows face east or west, vertical shading is necessary.

Vertical shading devices next to windows, like these two ornamental iron grilles, can be effective in reducing direct sun on windows. Late afternoon sun is often so low in the sky it gets under the widest overhang. At extreme right (above) is a louvered wood shutter.

Extended end wall of carport is another shading device which deserves copying by builders. This sun wall might have been extended still farther to shade a patio or rear living terrace. Wall of this type at west end of house is important factor in cutting sun load.

Louvered metal insect screening is a shading device, which manufacturer says lets only 12.5 to 18% of sun heat enter the room. Designed like miniature Venetian blinds, these screens let in light, but greatly reduce glare and will help to reduce the load on air-conditioning equipment. Such screens are made to fit any type of window.

Photos: (below) B. G. Chereau; (others) Dewey G. Mears

Shade trees such as these are missing!

One of best cooling devices of all has been neglected in Austin

Brick walls of house (above) were lined with insulation as shown (left). Over-all wall heat gain was cut sharply to 2,300 Btu's per hour. Same brick walls with no insulation would have heat gain of 7,000 Btu's per hour and house would need bigger cooler. Cost of 2" wall insulation: about 5¢ a sq. ft.

Brick cavity walls, backed-up with hollow tile, are being tested to see if heavy "mass" wall boosts cooling efficiency. Fiber insulation was poured into 2" cavity giving wall U factor of .12 and cutting over-all wall heat gain from 5,000 Btu's per hour with no insulation to under 2,000.

Frame walls, used in majority of Village houses, were bolstered with as much as 4" of bulk insulation or the equivalent in aluminum foil. Thus engineers hope to compare relative merits of foil vs. bulk insulation. Above photo shows walls blanketed with 3" mineral wool batts giving low .07 U factor.

All houses have wall insulation

The fact that every wall in Air-conditioned Village is bolstered with insulation of one kind or another is significant because wall insulation was practically unheard of in the South until a few years ago. Most Southern builders still omit it because heating problems are not severe. But air conditioning puts new importance on the need for heavy wall insulation because outside heat can penetrate, virtually unchecked, through uninsulated walls.

If the walls had not been insulated almost every house in the Village would have required a 3-hp air conditioner instead of the smaller 2-hp size. Various kinds of insulation were used including 2" to 4" of mineral wool and different types of aluminum foil. In addition, insulation board sheathing was used together with mineral wool or foil. Main objective of the first phase of the testing program is to find what kind of insulation gives best results cheapest.

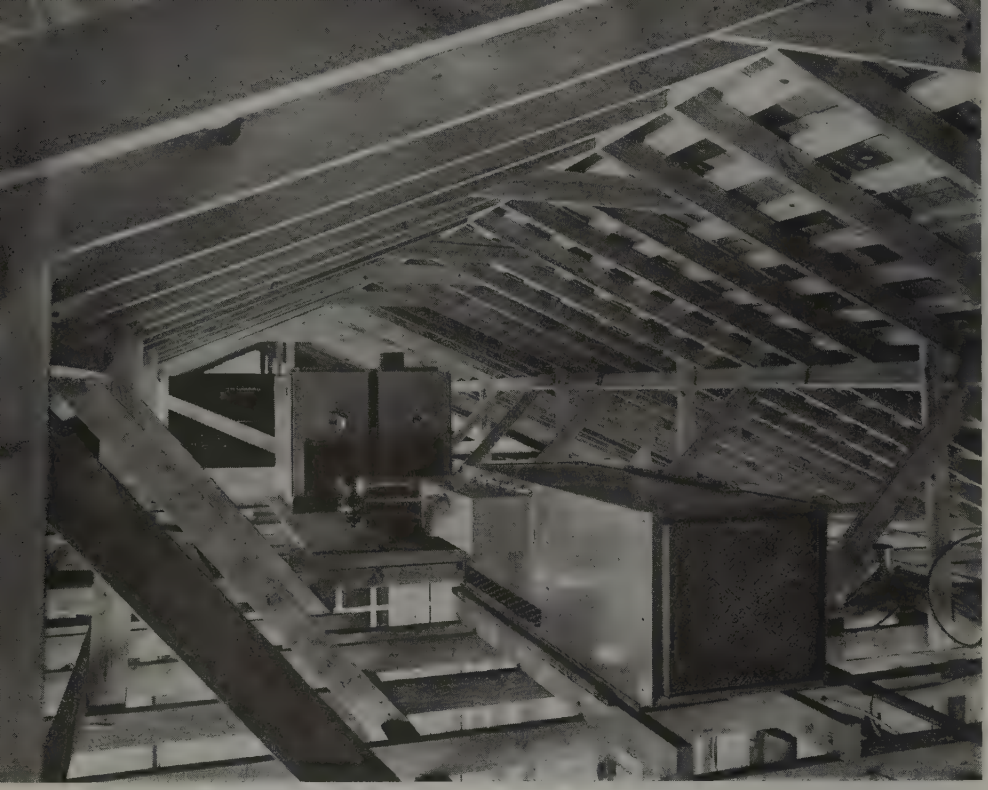
Exhaust fans installed in the 22 kitchens of Air-conditioned Village emphasize the importance of getting rid of cooking moisture before it can spread through a house and load down the cooling unit. Ideal location for kitchen fan is directly over the range as shown by the ceiling fan (right). Housewives have been advised to turn on fan only when cooking, turn it off immediately afterward. Also, kitchen window near fan should be opened a few inches during cooking to let in replacement air, prevent cool air being withdrawn from other rooms. Seven of the kitchens also have hoods over the range as shown (right). Each hood contains both a fan and grease filter. Engineers hope to determine how much more efficient the hood is than just a fan alone.

Courtesy Nu-Tone, Inc.; (others) Dewey G. Wears and Phototech Studios

How to solve moisture problems

Vapor barriers in walls and especially over the ceiling are believed to be quite effective in stopping high outside humidity from infiltrating the air-conditioned house. So several of the houses were enveloped with foil-backed insulation as shown (right). After these walls were insulated, similar insulation was laid in the attic with the aluminum-foil backing directly over the ceiling. All houses did not get vapor barriers because condensation is not a critical winter problem in the deep South.

Ground moisture can infiltrate the dry atmosphere inside air-conditioned houses, too. So several of the slab floors were sealed against moisture travel (as shown below). Layers of heavy roll-roofing paper were lapped over the fill before the slab was poured.

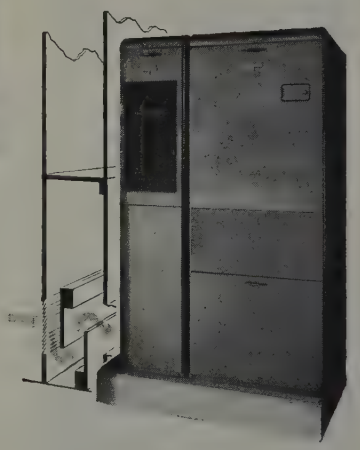


An attic location saves floor space and gets the noise away from the first floor. Unit can be put in the center of the house so duct runs are short. There are two disadvantages: installation and servicing are more troublesome than if unit is located elsewhere; and an attic may be so hot that it reduces unit efficiency. After this photograph was made, this attic was carefully insulated with a sheet of aluminum foil under the rafters plus insulation in the attic floor.

Where do you put the cooler

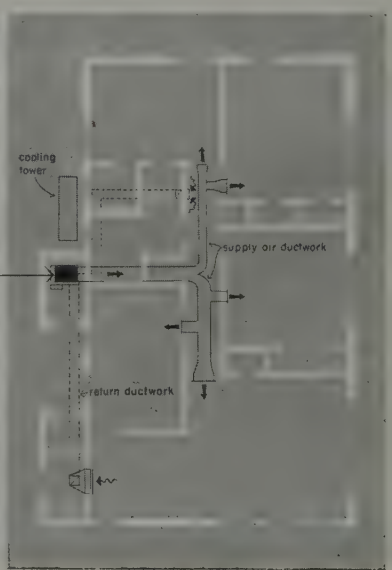
A basic question every builder must decide is where he will put his cooling unit. He may choose the center of the house, attic, basement or crawl space, garage or carport, or even a lean-to. And there are some divided units, half inside, half in the carport or outside. Each system can be found in Air-conditioned Village and each makes sense. Three of the most commonly used locations are shown here, and a crawl-space installation is on page 141.

Advantage of a central location is that ducts, piping and wiring are all relatively short. If ducts are short they are cheaper, and there is less work for a fan in pushing the air through to the outlets. Greatest disadvantage of a central location is the noise, which can be a source of irritation. Among the factors to be tested in these experimental houses is family reaction to noise and the effectiveness of sound baffling.



A center location cuts duct costs, is highly efficient but noise can be a nuisance. Whirring compressor noise usually travels straight into house via return air duct. Here, however, a sound baffle was inserted between unit and return air grille in middle of house. Sound waves don't go around corners easily so noise is suppressed. Return air simply flows around baffle like water around rock in midstream.

Photos: Dewey C. Mears



An outside location rids the house of noise and the serviceman, who can do his work without entering the house. Here the heating and cooling unit is in a separate room off the carport (as diagram illustrates). The unit is only 10' from center of house, so not much more ductwork was necessary. Ducts rise from unit, go overhead into house. Air is distributed through an overhead plenum. Return air passes through ducts in slab.

Camouflaging the water saver is done differently in each of the houses shown on this page. When water is precious, as it is in most of the Southwest, some device must be used to save it. House above uses an evaporative condenser which is hidden behind brick wall (shown in close-up at left). The refrigerant is cooled by a steady trickle of evaporating water, which costs less than $4 a season. The unit is in the center of the house, but most of the noise is kept outside at the condenser.

New ideas for hiding water savers

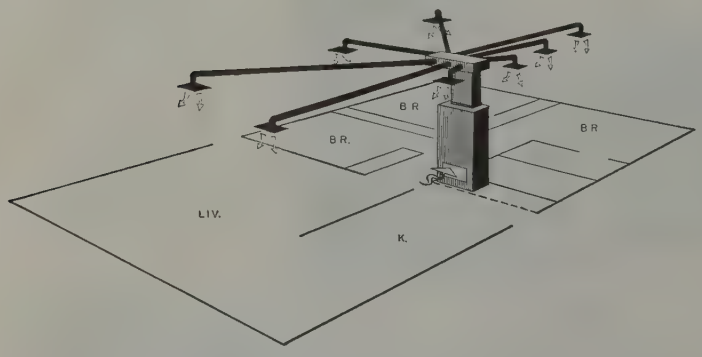
Landscaped air-cooled condenser is behind stone wall at the front door, and is only a few feet from the unit just inside. While the fan noise is at the front door, it is less objectionable here than if it were at the rear of the house where the outdoor patio is located. A forced-draft cooling tower could also be hidden away in the same manner. Either this condenser or a forced-draft tower can be located on any side of the house or at some distance away.

Under carport roof, this air-cooled condenser is out of the way, is inconspicuous, yet is efficiently located. This location is cheaper than the stone wall above. Copper lines carry the refrigerant back and forth between the condenser and the central unit. Other locations for air-cooled condensers include attic, or side wall of a garage or carport.

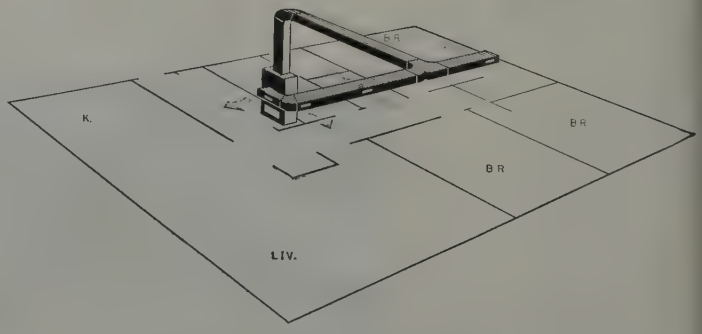
Ceiling outlets blend supply air with room air, then wash it down over windows in this system. Small prefabricated ducts are used which can be installed rapidly in this truss-roof house before partitions are in. Ducts are thoroughly insulated. This is only overhead distribution system in Village that would be acceptable in North for heating, in a slab house. Top drawing (on page opposite) gives more details on this house.

AIR-CONDITIONED VILLAGE

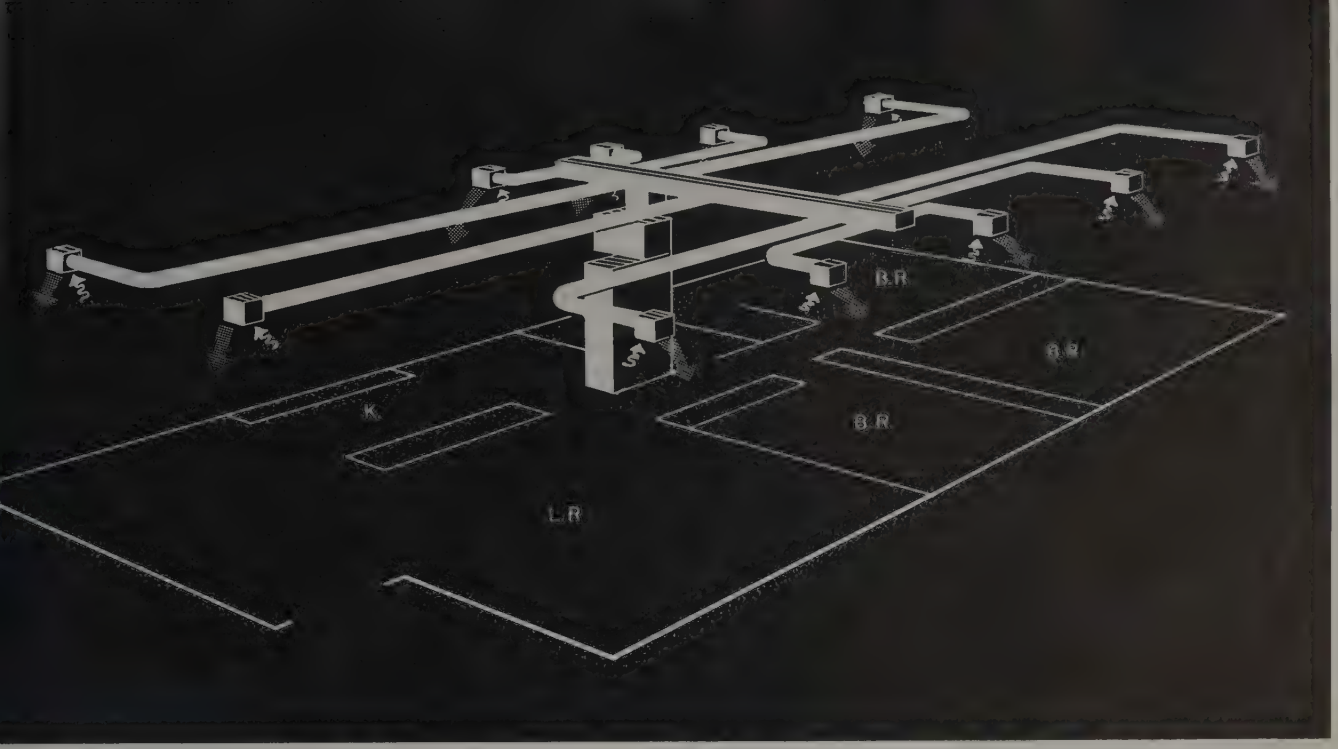
Test houses include every kind



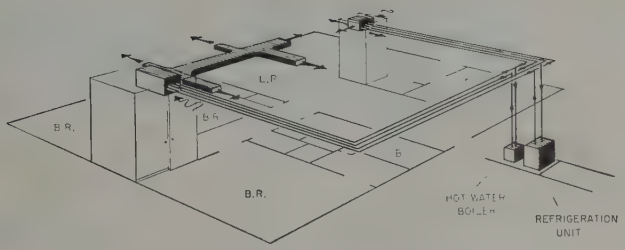
Overhead ceiling diffusers characterize this simple distribution system. It is economical because short runs of duct fan out from a centrally located unit and ducts can be installed rapidly. This would not distribute heat efficiently in cold climates, unless return air grilles were under windows.



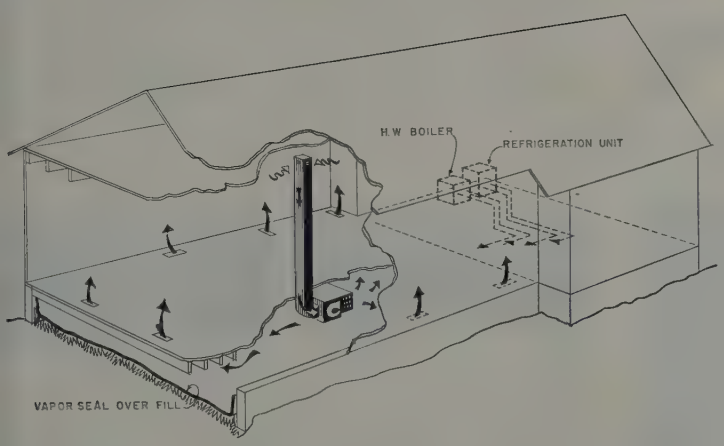
Furred-down duct in hall in this system is efficient and inexpensive. Because duct is built below regular ceiling, it eliminates insulation needed if it were in attic. Cool air passes from main duct directly to rooms through inexpensive grilles. While fine for the South, this system would not maintain warm floors in winter in the North.



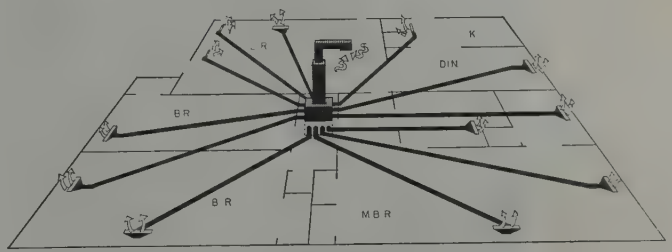
# of distribution system



Zoned system was installed in one house with living space as one zone, sleeping rooms another. Cooling unit is outside (as shown in drawing), and refrigerant is piped to and from each of the coolers. When a party is held in living room, cooling can be intensified by turning thermostat down, which calls for more refrigerant. In winter, hot water is distributed in same manner. Ducts are furred down from ceiling.



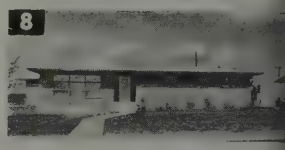
Crawl-space cooling (and heating) will probably excite more interest than any other system. Will cold air rise through the floor registers? Down-draft cooler blows supply air into crawl space, which must be well insulated and moistureproof. Crawl space has triple layers of 15-lb. felt, hot-mopped, with paper rolled up side walls to floor. This cost $61 for this 1,200 sq. ft. house. No ducts are necessary. Main heating-cooling unit is in garage, with both hot-water pipes and refrigerant lines running to fan unit in crawl space. Return air is drawn from house into top of unit.



Perimeter cooling and heating system in a slab house with radial ducts was installed, as it is by many builders in the North. Both cool and warm air are discharged into a plenum below the central unit, carried through 4" prefabricated ducts and discharged into each room through a 2" x 14" floor register. Ducts installed cost less than $200 per house. Another similar system has ducts in the crawl space, where they must be insulated.

AIR-CONDITIONED VILLAGE

	1	2
Builder; sq. ft. area:	G. E. Maxwell; 1,224	S. R. Sheppard; 1,200
Roof:	aluminum foil under rafters, 4" vermiculite over ceiling	4-ply foil over ceiling
Windows and shading:	36" overhangs	36" overhangs, reflective screening
Walls:	½" rigid insulation, 3½" vermiculite	½" rigid insulation, 2-ply foil
Heat load, Btu's per hour:	25,420	25,213
Air-conditioning sponsor:	Utility	Custom-Aire



	7	8
Builder; sq. ft. area:	A. J. Davis; 1,468	S. White; 1,350
Roof:	foil under rafters, 4" ceiling insulation	6" ceiling insulation, 24" attic ventilating fan
Windows and shading:	36" overhangs, sun wall on east, part double-glazed	30" overhangs, all double glazing, awnings on southwest
Walls:	3" insulation	2" insulation
Heat load, Btu's per hour:	24,760	26,714
Air-conditioning sponsor:	Majestic	Typhoon

	13	14
Builder; sq. ft. area:	W. Mayfield; 1,200	K. Flagg; 1,264
Roof:	new 3½" batt insulation, topped with reflective paper (see p. 130)	4-ply foil, 24" attic ventilating fan
Windows and shading:	36" overhangs, reflective screening on windows	36" overhangs, double-glazed windows
Walls:	2-ply aluminum foil	2" insulation
Heat load, Btu's per hour:	23,869	20,331
Air-conditioning sponsor:	Bryant	Coleman

	19	20
Builder; sq. ft. area:	R. L. Struhall; 1,146	C. B. Hibbetts; 1,216
Roof:	6" ceiling insulation	3" ceiling insulation
Windows and shading:	24" overhangs, reflective screening	36" overhangs, outside awnings on southwest
Walls:	3" insulation	2" insulation
Heat load, Btu's per hour:	22,290	24,096
Air-conditioning sponsor:	Westinghouse	Servel

First findings. When 22 kinds of cooling units are installed at once in different houses, especially by builders putting in their first air-conditioning systems, everybody concerned is bound to pick up some practical ideas.

1. There was no complete agreement on calculating heat gain, as different methods gave different results. Builders concluded the industry needs to agree on an accepted system so each manufacturer or dealer figuring a house will get the same answer.

2. Builders found that the manufacturers or their representatives did not understand the builders' problems, especially the fact that production schedules depend on precision timing, and that cooling units must be installed on time.

3. Local dealers did not give as much help on ductwork design as builders had expected. Some duct systems cost about ten times as much as others.

4. Electrical wiring was unnecessarily expensive in some cases, with one system costing over six times as much as another. Builders would like quick connections.

5. There seemed to be too wide a variation in total costs, as one unit costs over four times what the least expensive did.

6. A tug of war still goes on over the size of the equipment room: dealers want it larger, builders want it smaller. Some producers say it is impractical to crowd complex equipment into a small area.

Above are basic facts on all 22 houses

W. Carrington; 1,176

4-ply foil over ceiling

36″ overhangs,
part double glazing,
metal awnings on east

2″ insulation

23,910

US Radiator

L. Wilson; 1,258

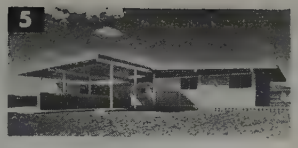
6″ ceiling insulation

30″ overhangs,
awnings on northeast and southwest

3″ insulation

24,751

US Airco



W. Burns; 1,170

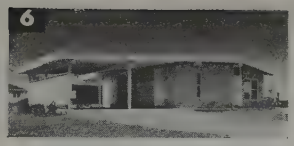
4-ply aluminum foil,
white roof

30″-48″ overhangs,
heat-absorbent clerestory glass

3-ply foil

29,784

Chrysler



J. Andrewartha; 1,170

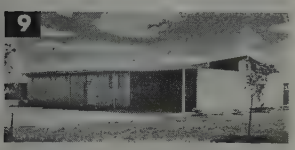
4″ ceiling insulation

32″ overhangs,
reflective screening

2″ insulation

22,070

York



A. S. Patton; 1,200

white roof,
4″ ceiling insulation

36″ overhangs,
sun wall on west (see p. 132)

2″ insulation

25,360

Carrier

S. R. Sheppard; 1,300

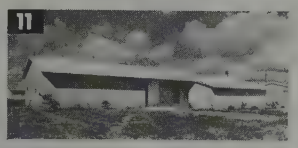
aluminum foil under rafters
4″ ceiling insulation

36″ overhangs,
part double glazing,
canvas awnings on southwest

2-ply foil

22,891

Frigidaire



F. Barren; 1,270

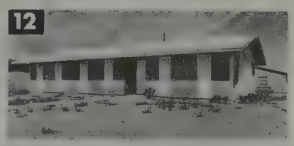
6″ ceiling insulation

60″ overhang,
over floor-to-ceiling windows

insulation board
plus 2″ batt insulation

24,973

American-Standard



B. N. Holman; 1,250

6″ ceiling insulation

36″ overhangs,
reflective screening

insulation board sheathing,
¾″ rigid insulation,
foil-backed plasterboard

26,017

American Furnace

B. N. Holman; 1,248

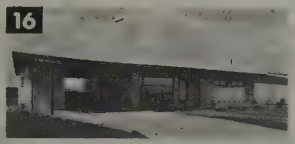
aluminum foil under rafters,
4″ ceiling insulation,
24″ attic ventilating fan

32″ overhangs,
outside shutters on southeast

nsulation board sheathing,
oil-backed plasterboard

24,336

terling



H. T. Baker; 1,390

3″ rigid insulation,
in pitched, built-up roof

36″ overhangs,
outside awnings

4″ insulation

25,288

Lennox

R. L. Struhall Jr.; 1,200

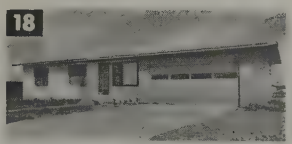
6″ ceiling insulation

36″ overhangs,
reflective screening

3″ insulation

22,707

Day & Night



W. H. Bullard; 1,210

4-ply foil

30″ overhangs,
reflective screening

2-ply foil

23,455

Drayer-Hanson

. L. Caruthers; 1,200

oil under rafters,
″ ceiling insulation

4″ overhangs,
wnings on southeast

″ insulation

5,311

Vorthington

W. H. Bullard; 1,200

6″ ceiling insulation

30″ overhangs,
reflective screening

2-ply foil

24,080

General Electric

lotes:

ineteen of the 22 houses have a slab-on-ground floor; umbers 8, 18 and 22 have crawl spaces.

ll have kitchen exhaust fans, 12 have bath exhaust fans.

Four-ply" aluminum foil is the commercial term enoting three accordion sheets of foil installed with four air spaces.

Three-ply foil" refers to a double-layer foil insulation installed with three air spaces.

Two-ply foil" refers to a single sheet stalled with two air spaces, one on each side.

Photos: Dewey G. Mears and Bill Malone

New yard is located "in the country" better to serve builder rather than retail trade

Three jig tables on which panels are

Lumber dealer is turning

Here is a traditional lumber dealer—Kansas City's R. L. Sweet—who is now evolving into a prefabricator.

"What Sweet is doing is the biggest new change in the building industry to benefit the small builder." So says Earl Horttor, building superintendent of J. C. Nichols, Kansas City's renowned land developer-builder-realtor.

What Sweet is learning and applying to his business is as important to lumber dealers as it is to builders all over the US.

Prefabrication—practical and essential

Says Sweet: "The prefabricator has had enough experience and success to make us realize it's practical." To which his good friend Earl Horttor, who now prefabs his own panels, adds: "Bob realizes prefabrication is more than practical; it's essential."

Sweet started prefabrication partly to help his best customers who were calling for "more complete packages," partly to keep from losing good customers to the national prefabricators. Almost 65% of his business is with builders—from the smallest to those who erect 300 or more houses per year. Remaining business is with industry (pallets, lumber for remodeling), some retail.

His first experience in prefabrication started with big builders: two years ago Jim Stanton (450 houses a year) tried to build his own roof trusses with carpenter labor, ran into union trouble when he tried to set up his own shop. Sweet soon convinced him Sweet's lumberyard could make trusses cheaper and faster. Sweet has since fabricated over 30,000 trusses, has the operation down to 7½ minutes per truss.

Next Sweet found he was losing Big Builder Don Elbel's business (up to 350 houses a year) because Elbel was getting knock-down wall sections from the West Coast. Sweet countered with a better offer—to deliver wall sections to the job completely assembled, shingles, windows, insulation and all.

Soon Sweet was setting up separate departments to assemble more components and precut more material. Among them: sash-and-door, kitchen-cabinet and garage-door departments. Although

R. L. "Bob" Sweet has been in the lumber business since he graduated from Illinois in 1924. Says he: "The lumber dealers may not always have moved ahead as fast as some others on new design and merchandising ideas—but somehow I'm reminded of the hare and the tortoise. . . "

fabricated are all Sweet needs to produce 2,000 panels a year

Completely sided and insulated, panels are lifted into delivery truck

prefabber to help his builder customers and *himself*

Sweet does some of his own millwork, he says: "I'd rather stay with stock items. We manufacture only items we run out of. Our sash and door department puts windows together from components of several manufacturers. We'd need a larger volume to do the whole job and compete with big manufacturers."

"Each department must pay its own way," says Sweet. "If an operation doesn't make money, we drop it." Latest department, less than a year old, is Sweet Lumber Fabricators Inc., wholly owned subsidiary.

"Our idea is to help the small builder, the five- to six-houses-a-year man,*" says he. "Anything we do for the big builder works as well for the little fellow. In fact, we can save the small builder more money even if we can't give him the same low prices. When he buys his components from us all prefabricated, he soon finds his whole flow of work speeded up and his efficiency increased. We save on the cost of materials by sheer volume. We are already set up for mass production because we have a going yard. Our new sheds were designed for handling rather than storage, and aisle widths throughout our yards are planned with a fully mechanized operation in mind. Thus we can handle efficiently, and at an almost unbelievably low labor charge. Our location and a spur that holds 21 cars makes that possible."

When should a builder become his own prefabber?

There is a volume below which it is not practical for a builder to set up his own prefab operation. Sweet is inclined to place this "breakpoint" close to 250 houses a year. Earl Horttor places it close to 50 houses, "provided that the builder does 50 or 60 houses every year, year in and year out" (as J. C. Nichols does). "But even above the 250-house breakpoint," Sweet points out, "we already supply wall sections to Don Elbel who builds from 300 to 350 a year.

"Wherever the breakpoint is, builders below it literally can't afford *not* to use us. Several medium-sized builders who have started prefab operations in their own yards have learned to their sorrow that it cost them money and have had to close down. If a builder wants to by-pass the lumberyard, he must have a great deal of capital he is willing to tie up in plant, equipment and inventory. And if he has ups and downs in his building operation, he soon has equipment idle and a big overhead to meet."

"One big advantage a lumber dealer like Sweet enjoys," says Horttor, "is that he can pay mill scale for fabrication whereas the build-for-sale fabricator must pay full carpenter scale." The differential around Kansas City is 87¢ an hour.

Packaged services for the small builder

"The really small builder who works on his own houses during the week and sells them on week ends himself just isn't equipped to do the job we do for him," says Sweet, who handles FHA paper, construction and final financing for his smaller customers. "In effect we become the small builder's bookkeeper."

A design department headed by his architect son-in-law Ralph Kiene (see p. 147) is another packaged service Sweet offers. Like Lumber Dealer Clarence Thompson (H&H, July '54), Sweet believes in giving the builder what he wants in the shape he wants it, has even sold roofing and oak flooring applied.

How do builders like working with Sweet?

Don Elbel: "On a $12,000 house with about 6,000 bd. ft. of lumber, I would pay $80 per M for on-site labor using conventional construction techniques. Prefabbers can do the same job for about $20 per M. The least that Sweet can save me is $350 a house."

George Siemens, now doing 28 $10,000 houses: "What impresses me most about prefabrication is the saving in time. In 3½ months I will have 28 houses ready for occupancy. Besides, I have less overhead, can sleep nights if there's a lumber strike." *(To see Siemens' operation in action, please turn the page.)*

**Actually a builder of five houses a year is in the top 19% of builders (five and more houses) who build 77% of all units. Only 22,430 of the country's 119,100 builders erect more than four houses a year, according to the most important BLS study.*

Building from the back of a truck

Five truckloads, timed to reach site in building sequence, bring:
1. Lumber for platform over crawl space day before walls go up.
2. Exterior wall panels when workmen start the next morning.
3. Interior partitions five minutes before exterior walls are up.
4. Roof trusses and gable ends shortly before partitions are set.
5. Roof sheathing, doors and hardware when all trusses are up.

Houses for George Siemens (below) were fabricated by Sweet according to the builder's plans. With experience gained from working with bigger builders, Sweet will engineer his own houses, have his architects design them for small builders. Says Big Builder Don Elbel: "The lumber dealer can help small builders with better design, spread it around the way new Fords do."

8:10 A.M. Labor force of five carpenters and two laborers has already worked ten minutes, put up two front wall panels. Ground was leveled so truck could back up to platform.

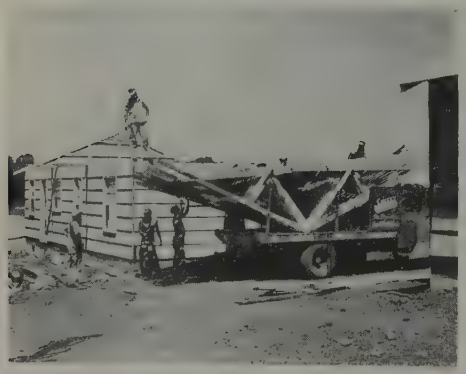
8:12 A.M. Side wall panel, tipped from back of truck, comes off easily, is slid on edge across platform to reduce friction. Sweet had tried loading panels flat, found work crews had more difficulty lifting that way.

8:30 A.M. Sixth panel is set in place. Full crew is used while each panel is placed, braced, joined to others. Awning windows installed in panel are already glazed.

8:40 A.M. Eighth panel is placed. Mallet is used to force panels tight against each other. Under ideal conditions all wall panels can be up in 45 minutes, usually take one hour.

9:00 A. M. Preassembled interior partitions are moved into house through gap left in front wall where integral door and window wall will be placed after all the interior partitions have been erected.

9:10 A.M. Carpenter crew sets nonload-bearing partitions before trusses are erected because workmen like it that way and Sweet found his "back of truck" system fitted in.



9:45 A.M. All partitions are erected, front window wall placed, first gable end in place. Truck circles house bringing gable ends and trusses closest to points of erection.

10:00 A.M. Builder Siemens watches truck pull around house after second gable end is set. "I may not save on materials cost," says he, "but I do on time and overhead. And we don't have materials shortages."

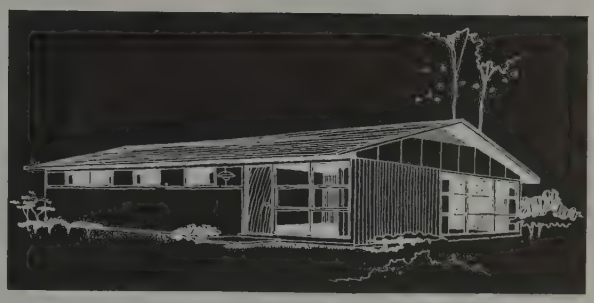
3:30 P.M. Houses are substantially under roof at day's end. Neighboring conventional builder, C. W. Jones (110 houses a year), is deeply impressed by Siemens' speed.

Sweet will offer new plans, models each year

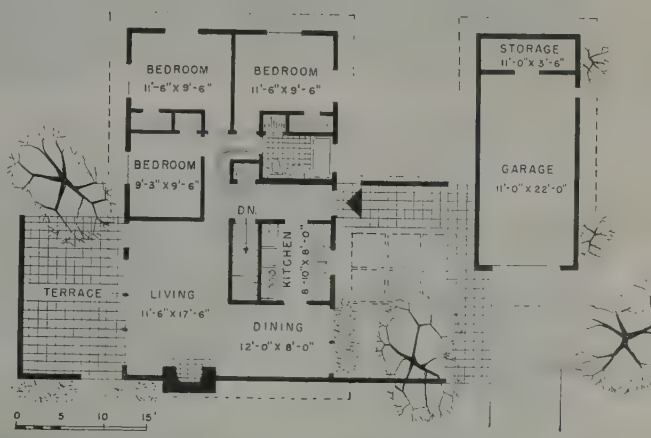
Recognizing the demand for better design, Sweet says: "We have a design program outlined for a couple years ahead. But we admit we have a long way to go because we're just beginning."

With the "Sweet Dream Home" (below), he is bidding for the low-cost mass market and the small builder. House package for model below will sell for $3,735 excluding garage, fences. He worked for several months with Architects Linscott, Kiene & Haylett to get the house engineered for economical building. The architects planned the house so it can be switched three ways on a lot, thus offering builders built-in variation on their plots without requiring costly frills and flourishes.

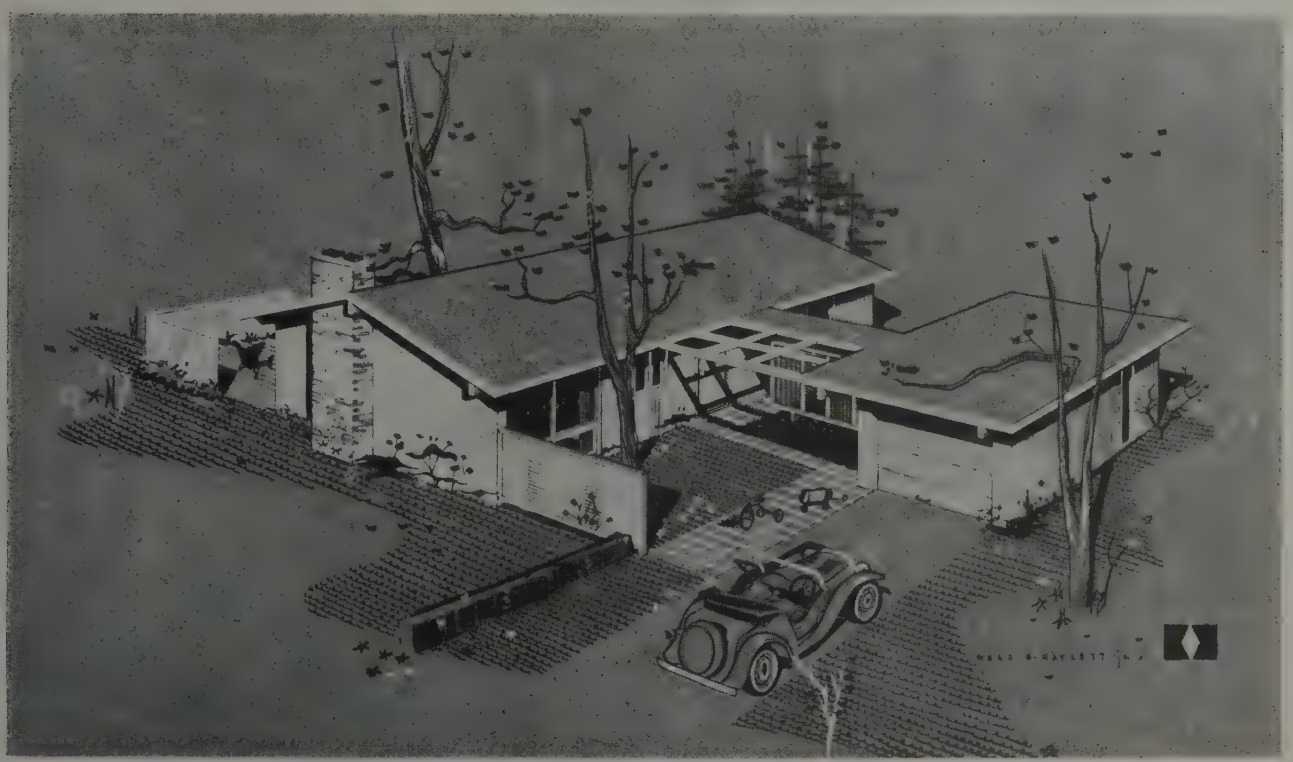
"Once we get into production with this design," says Sweet, "we hope even the large and medium-size builders will find it attractive enough to order the whole package. Past experience with the large project builders leads us to believe they have rather definite ideas of what they want in a plan. As we continue to serve them, we'll probably follow their suggestions. But our biggest aim with the prefab subsidiary is to offer our own design. materials and financing packages to the small builders. If we can get volume on certain basic plans, we will be able to lower the small builder's costs even more than we can now."



1954 model includes this four-bedroom house and two- and three-bedroom versions. Like other prefabbers, Sweet realizes he needs wide variety of sizes and models and must keep improving them.

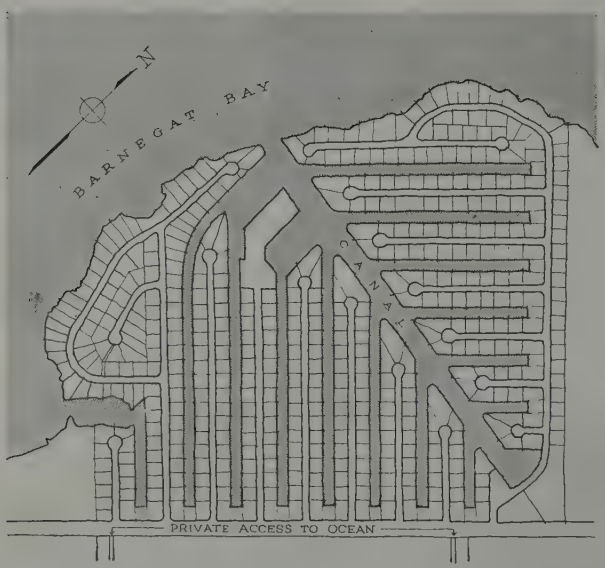


1955 model, "Sweet Dream Home" (below), will shortly be erected and displayed in Sweet's yard for his small builder customers to inspect just as they inspect other Sweet products and samples. Model can be built with 5-in-12 roof pitch or with expansion attic. Plan neatly solves problem of putting garage on service side and still letting guests enter "dead-ended" living room directly.



Photos: S. C. Valastro

Canals give water frontage to each site



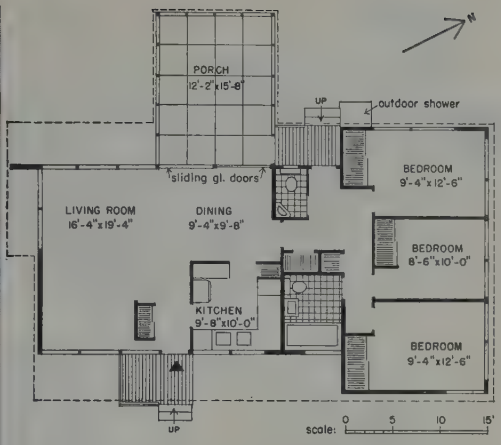
Network of canals, *dredged out to provide both access to waterways and fill for the subdivided lots, will permit docking of boats at most sites. Minimum lot sizes will be 10,000 sq. ft.; houses range from $10,000 to $20,000.*

LOCATION: Long Beach Island, N. J.
SIDNEY M. SHELOV, architect
LONG BEACH ISLAND DEVELOPMENT CO., builder
A. MARTIN FUNNELL & CLARA COFFEE, landscape architects

A web of canals, dredged from the low-lying peninsula, brackets each house in the Loveladies Harbor beach colony with cooling water on at least two sides of its site, and projecting lanais guarantee that breezes from any direction will flow through the houses.

Architect Sidney Shelov provided all three walls of his living porch with full-length glass jalousies to capture any stray breezes, but made provision for walling off the house proper in case of bad weather. Surfaces are utilitarian: asphalt tile in the interior to resist sand and water; stained cypress board on the exterior to weather handsomely.

Because this entire shore is flat, all houses will be sited to permit maximum views past their neighbors and across 6-mi.-wide Barnegat Bay to the mainland.



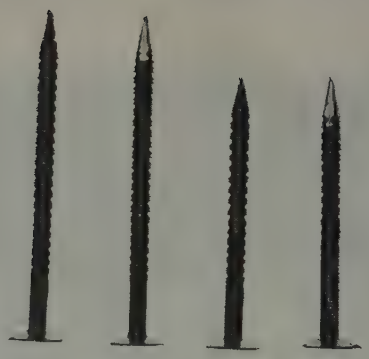
Glass jalousies *open all three lanai walls to prevailing winds, funnel air into indoor living and working areas. Sliding glass doors close off house from porch if ocean-front nights get cool.*

in resort colony

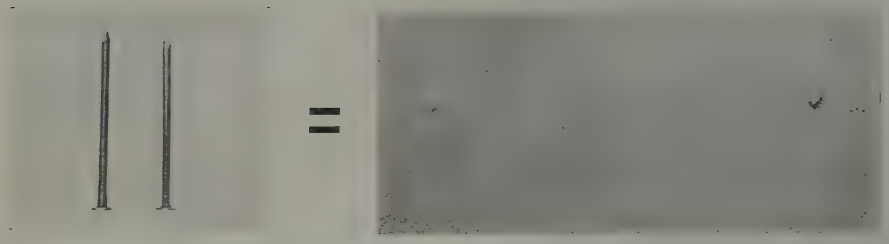
Sheltered porch *offers hospitality to visitors arriving by road, while twin windows in kitchen permit observation of front entrance. Wall extension (left) provides shade for living-room corner window, also is structural brace.*

Cross ventilation *is main objective of window placement, while 3" insulation batts in walls and roof ward off the heavy sun load. Living room is paneled in mahogany, rest of house is dry wall. Exterior planking is stained cypress.*

NEW PRODUCTS



Grooved nails end "popping"



Plain shank nails lose grip

Nailheads back out of dry-wall surface

One of the most perplexing (and expensive) builder problems has been the tendency of cement-coated nails to "pop" from the face of gypsum-board walls, usually after the walls have been painted, and often after the buyer has moved into the house. Resetting the nails is simple, but repainting comes high.

Several years of research at Virginia Polytechnic Institute under Dr. E. George Stern, and on-the-job experiences of leading dry-wall applicators indicate that substituting an annular grooved nail, the *Tapered Stronghold Screwnail*, for the usual cement-coated, plain-shank nail, will almost completely eliminate this "smallpox" at a cost of less than $5 per house. The parallel rings of the nail, like the barbs of a porcupine quill, wedge themselves into the fibers of the wood and show no inclination to loosen or "creep."

Leonard C. Fleming, *Milwaukee, Wis.:*
"We had to go back and make major repairs in one out of every four houses. Now, for $2 to $3 per house, we have eliminated 98% of our nail pops, which used to cost us from $10 to $50 per house."

John A. Cicci, *Melvindale (Detroit), Mich.:*
"We tried everything to stop nail popping, but in vain. Now the only popping we have is where framing is out of line and the nail doesn't hit enough wood to hold it. And it costs us only about $2.50 on a five-room house."

Andy Place, *South Bend, Ind.:*
"We think the Stronghold nail moves with the wood as it dries, and eliminates the gap between the wallboard and stud, thereby keeping the board tight and stopping the movement that causes nail pops."

Lincoln Dry Wall Co., *Lincoln, Neb.:*
"We used to use cement-coated nails, and had trouble only occasionally, but during the six months we have been using this nail, we have had no popping."

W. G. Best, *Factory-Built Homes, Peoria, Ill.:*
"We reduced our nail popping by about 85%."

Carl C. MacCartas, *Bethesda, Md.:*
"Nail popping is no longer a problem with us, though it used to be very serious, and going back cost us from $10 to $20, plus the inconvenience."

Frank E. Horpel Jr., *Laguna Beach, Calif.:*
"About six months ago we determined that a nail with the characteristics of a porcupine quill would be more satisfactory. This ringed nail fits that description. We believe that the wood fibers actually clinch around each individual ring on a far more satisfactory basis."

Charles A. Immer, *Washington, D. C.:*
"We believe that this nail, properly driven, will not pop. The poorer the lumber, the greater degree of nail popping, and core and paper quality of the wallboard have a decided effect on the proper dimpling of the nail."

More evidence to come

One important piece of research, a 2½-year study of nail "creeping" made by Dr. Stern, was sponsored by the Gypsum Assn., and is expected to be released by the Technical Committee at the fall meeting in October. In the meantime, H&H queried applicators throughout the country who had had experience with the grooved nail, and their reactions are given on this page. The findings and evidence, though empirical and personal, suggest advance confirmation of the laboratory findings, since every reply was favorable. While Dr. Stern has left release of his finding entirely to the Association, he was able to say:

"Laboratory reports clearly indicate that this is the best nail available at this time and field data seem to confirm this finding."

How strong, how long?

A different series of tests was sponsored by the Independent Nail & Packing Co., and findings have just been released by Dr. Stern. These experiments tested the holding power of cement-coated and grooved nails, with the following results:

"As soon as the test plank had seasoned, the effectiveness of the nails began to vary. The cement-coated, plain-shank nail quickly

continued on p. 208

Cooling costs cut almost in half

If one of Detroit's auto makers came out with a new engine that provided the usual 100-plus hp, but used only half as much fuel, it would shake up the industry. Air conditioning may be in for just such a jolt from Ultrasonic Corp.'s *Temtron*, which claims a full 2 tons of cooling from a 1 hp compressor motor.

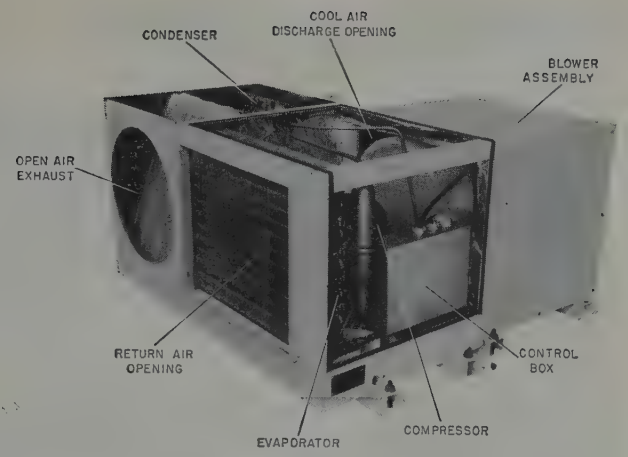
Since the compressor's electrical demand determines operating costs, the current used by this unit will be 30% to 50% less than that of the usual 2 hp motor that powers other 2-ton coolers. Total electrical input of the *Temtron* will be less than 2 kw, instead of the 3 to 4 kw usual for air-cooled units. Operating costs for 750 hours of operation would be only $30 at a 2¢ per kw-h rate.

The doubled capacity of the *Temtron* is based on a still secret arrangement of the evaporative condensor mechanism, an accelerated transfer of heat from refrigerant (Genetron 141 or Freon 22) to the cooling surface, and an improved spray head that jets cooling water onto the entire rectangular condensor coil.

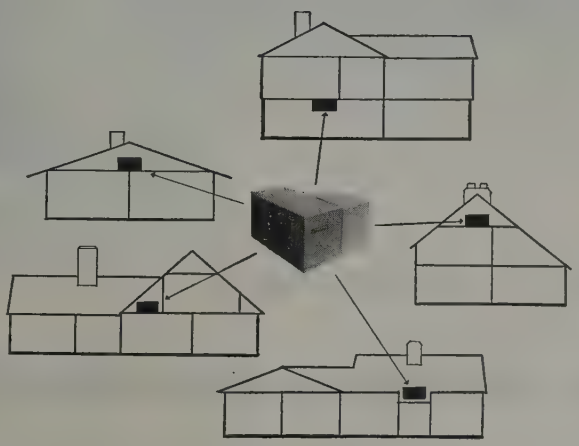
For the average house

Over-all size of the *Temtron* is 42" x 36" x 21½", permitting it to be installed in attics, basements or crawl spaces, closets, or hung from a hallway ceiling. Total weight including blower assembly is only 285 lb. It operates on the usual 240-v., three-wire AC current. Since the unit has a built-in evaporative condenser, water consumption (critical in many areas) is only 10 gal. per hour. No separate cooling tower is needed. A ¼" tube is all that is required for water supply, with a ½" outlet tube (local regulations may require a larger outlet). The light weight, versatility, and modest installation requirements make the unit important to the mod-

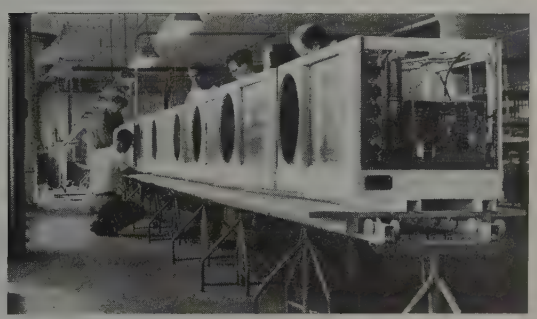
continued on p. 182



Compact arrangement of Temtron is shown when top panel is removed.

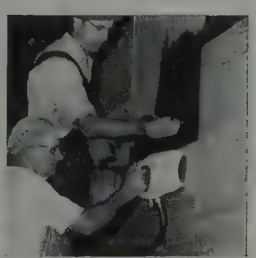


Varying location of unit is made possible by condenser dimensions, but both water supply and waste lines will have to be provided.



Assembly-line techniques are adopted to achieve mass production of 2-ton units. Other sizes and models will be added in future.

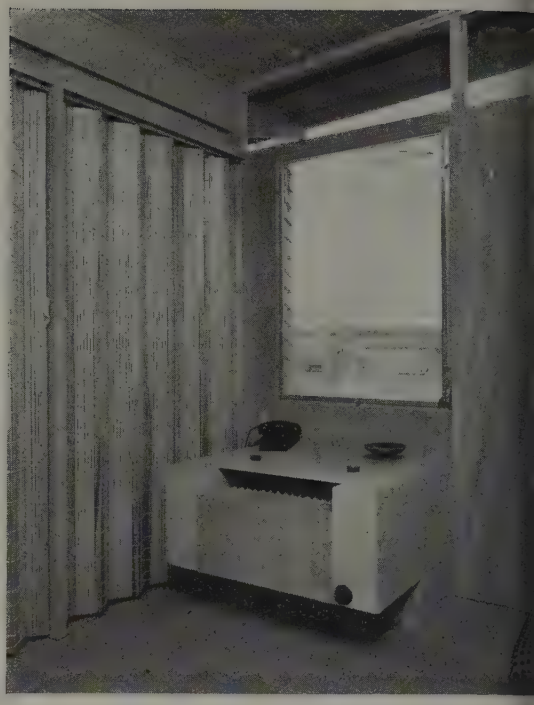
Other NEW PRODUCTS in this issue



Taping tools for dry wall . . p. 186 an electronic gluing gun . . . p. 194 an "invisible" gutter . . . p. 192 and a sprayed vitreous wall p. 194

Photos: Dewey C. Mears

Summer air conditioning is provided in this 1,250 sq. ft. San Antonio house by three 1-hp room coolers carefully located to zone temperatures throughout the interior.



Special cabinet by Architect Ryan covers unit, is handsome and serves as table or telephone desk. Air is supplied through horizontal opening, returned below.

For summer cooling in *new* construction

When do window air conditioners make

Everyone knows that window units are doing an admirable job of summer cooling in existing houses, offices, hotels and apartments. Why can't they do just as fine a job in new construction?

The answer is, they can. They are already being used in many new apartments and motels, especially in Florida and the Southwest. Room coolers will undoubtedly be used increasingly in new houses and other new construction, especially when dealers get out and start selling. Their market has mushroomed so fast of late that it is easier to fill orders from owners of existing buildings than to hunt up new-construction business.

In new houses

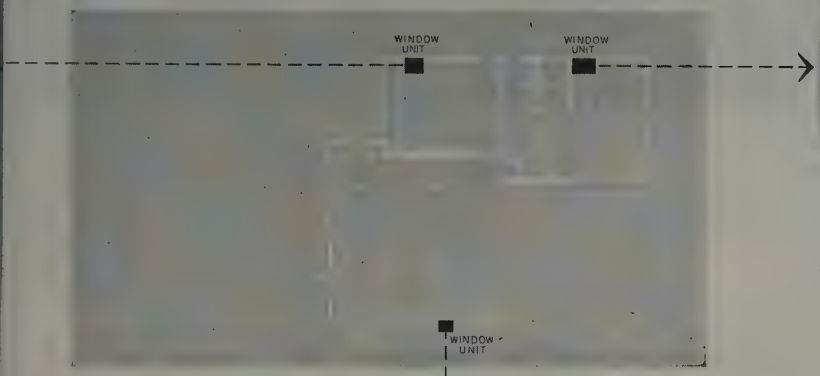
Room coolers make good sense in new construction but there are many strings attached as to when and how, some of them discussed in the next pages. One of the best examples of built-in window units is in the 1,250 sq. ft. house shown here, designed by Architect Milton Ryan. He has overcome one of the most common objections to room coolers: their appearance.

Ryan prefers radiant heating and did not want to install expensive ducts just for cooling. He bought three 1-hp units without cabinets at a wholesale cost of $260 each. In addition he spent about $100 each on his cabinets, installed. He brought in a 240-v. three-wire system as he would have for a central unit. He estimates total cost at about $1,200, for which he gets 2½ tons of actual cooling capacity. This is because each 1-hp unit only gives about 10,000 Btu's cooling whereas 1 ton is equal to 12,000 Btu's per hour.

Bedroom coolers (see plan, photos) were oversized deliberately to produce quick cooling when needed and where wanted. When the family is out for the evening they cut the bedroom units off.

Disadvantages of room units: cooling efficiency is less than with a central system, life of the units may be eight or ten years rather than 20, and operating costs will be more if all units are operated continuously.

Planting box hides protruding unit exterior, normally an eyesore. Front of this unit is set almost flush with inside wall (as shown opposite). Box is open at top to permit air circulation.



Entirely inside the room, this unit looks well from within and also gives outside of house a clean line. Only external evidence is neatly designed horizontal louvers through which air circulates to the air conditioner. Bedroom units were oversized deliberately so that they can be left off in daytime and still produce fast cooling at night.

sense?

Front cover of living-room conditioner is easily removed and unit can be slid forward into room for servicing. Whenever room-unit covers are redesigned or adapted by an architect he must be sure he does not tamper with air flow, which has been carefully regulated at the factory.

Photos: Dewey C. Mears

Dummy window with glass jalousies (at left above) actually covers rear of bedroom cooler in San Antonio house by Architect Milton Ryan. This "cooling window" is perfect match for regular window in center. Jalousies are easily opened in usual manner for outside air.

Entire unit in the Ryan house is inside a bedroom and is furred-in over series of drawers. Cool air is discharged through top grille. Return air from room is pulled in through bottom grille.

Room conditioners fit well into some custom houses

Room coolers are well-adapted for special needs

While most air-conditioning engineers believe that a central cooling system will do a more efficient job for an entire house, window units make sense under the following conditions:

1. In geographical area where cooling is needed only a short time during the summer and the cost of a central system has not yet been accepted by the buying public. With window units built into the wall of a living room and a master bedroom, for example, a builder can provide cooling at less than the cost of a central system. (For costs, see below.)

2. In hot climates where cooling is needed and accepted, but there is a point in the price range, usually between $12,000 and $15,000, below which people will not pay $1,000 for cooling.

Yet builders can offer partial cooling of a house below this critical price level by installing two or three room coolers. In Phoenix, the lowest-priced new house with 2 tons of central cooling is $10,995, so this becomes the competitive break-even point for window units. In most cities it is higher.

3. In new houses where the builder, designer or client prefers a heating system which does not use warm-air ducts, such as any form of wet heat, radiant heat, electric heat, wall heaters. Because window units can be installed without ducts, they offer an economic advantage when combined with such heating.

4. In houses where only a portion of the total space needs air conditioning. It is sometimes uneconomical to cool bedrooms in the daytime if they are not used and if night temperatures are usually cool. Room coolers can be used in strategic spots such as the kitchen and living room.

5. In sprawling ranch houses where the cost of long duct runs might be excessive.

6. In one or two rooms of a centrally air-conditioned house where a guest room, maid's quarters or a recreation room is at some distance from the central unit—on the opposite side of a breezeway from the main house, for example.

7. In custom houses where members of the family want individual room controls so they can set temperatures to please themselves. Elderly people usually prefer higher temperatures.

FHA has approved some built-in cooler installations

Whether or not a builder can get credit for installing window units depends on the local attitude of FHA and VA. A year ago FHA's approval of air conditioning was limited to central systems but now it is recognized that "there is no need to confine air conditioning to homes of higher income groups," as Fred McGhan, FHA's chief mechanical engineer, says. "Discriminating against the vast majority of home buyers is not our purpose."

FHA is more readily convinced that window coolers are a part of the structure and should be insured if they are built into the wall and are not easily removable. Says J. Stanley Young, chief of FHA's property requirements section: "It is largely left to regional FHA offices to determine what will or won't be included in an FHA underwritten loan. When a new situation arises, as in the case of air conditioning, the regional offices turn to Washington for advice and direction. I would say that room conditioners installed in a wall or integrated with the house structure in some equally permanent manner would be considered a permanent part of the realty and eligible for inclusion under an FHA loan." But FHA assumes that a room-cooler installation must do an efficient job, that contiguous areas are not blocked off by doors, and that there is a unit in at least one bedroom. FHA has in the past insured in several different cities apartment houses with built-in room coolers.

Desert house of Kenneth Sloan outside Phoenix was designed for window air conditioners, with two 1-hp units in living room, one in the den, and one ¾-hp unit in each of two bedrooms. He specified these instead of central unit because they gave him flexibility of room control. Only room cooled is a room being occupied.

Living-room conditioners project into room, rest on built-in bookcases. On the outside they are recessed several inches into wall (as photo below illustrates). In the two bedrooms (not shown) the units are mounted almost flush with the inside wall and consequently stick out in the back. Units keep masonry house cool, even in hot desert.

Room coolers vs. central systems in new houses

Initial costs are usually lower for window units because there is no ductwork. Builders might pay anywhere from $200 to $350 for ¾-hp units (bought at discount during the off season) which amounts to $266 to $464 per hp. Central units vary in price but a typical figure is from $1,000 to $1,200 for 2 hp installed, including ducts. However, if more than three window units are installed, the cost tends to be the same as for a central unit.

Operating costs of a ¾-hp unit of 1,300-w. in Dallas (rate: 1.65¢ kw-h) is 2¢ per hour; 2½¢ per hour in San Antonio for a ¾-hp unit of 1,250-w. (rate: 1.75¢); and in cities where the rate is 3¢ it is reported to be about 27¢ for ten hours of use in 1,300-w. units with a thermostat. In 3¢ areas a ¾-hp unit operating ten hours a day in 95° outside temperature would add from $8.20 to $11.40 a month to electrical bills. Two tons of central cooling for whole houses cost about $13 per month last summer in Dallas (H&H, March '54).

Most air-conditioning engineers would agree that central units produce more cooling for an entire house at less expense than window units. If window units cool only part of the house part of the time, their operating costs would be less than that of a central unit cooling an entire house.

Replacement costs are higher for window units. Their life is probably not over ten years. Many users trade them in after five years to get newer, better models. Central units may last twice as long under the same operating conditions.

Noise level is higher in window units because they are right in the same room with the occupant.

Humidity control is probably better with central units which keep humidity down throughout the house, not just in the rooms where a window unit is operating.

How to wire a house for window units

Much of the dissatisfaction with room coolers stems from inadequate wiring. Units will not deliver full cooling capacity unless they can draw full power. Moreover, poorly wired units cause sharp voltage fluctuations, lights flicker and TV is affected.

Builders should run a separate circuit of No. 12 or No. 14 wire to each room cooler. A 120-v. circuit is usually ample for units up to ¾ hp in size. However, those ¾-hp models with thermostats for automatic operation generally draw such high starting currents that they need 240-v. circuits, unless the manufacturer supplies a current limiting device. For 1-hp sizes or larger, electric companies generally require a 240-v. circuit. Builders should consider using the three-wire system recommended in an earlier issue of HOUSE & HOME (Nov. '53, p. 132).

One of the biggest wiring problems arises from a wide variation in electrical characteristics among the various cooling units made by different firms. Some units have power factors of less than 90% which is generally inefficient and causes trouble for both builders and electric companies. So many headaches have resulted from inefficient units operating at a low power factor that St. Louis' Union Electric Co., for instance, was forced to put wiring limitations on brands with less than a 90% power factor.

Some brands of coolers have power factors as low as 60%, which is unsatisfactory to the electric company. And some brands may draw as much as 25% more starting current than the same size unit by other manufacturers. For these reasons, builders are advised to call their electric company for wiring advice.

M. E. Skinner, vice president of the Union Electric Co., sums up the wiring situation this way: "There is nothing inherent in room air conditioners that makes them susceptible to electrical problems 1) if the power factor is 90% or better, 2) if starting currents meet minimum accepted standards, and 3) if units are served by adequate electrical circuits."

LIFE—*Ralph Crane*

Room coolers are ideal for motels (like the above) which are widely dispersed. They also save on installation costs when motel consists of small, separate cottages. Built-in window units give each guest individual control of temperature.

Window coolers make

In motels consisting of separate cottages, room units probably work at their very best. Operating costs are relatively low because units are not often on in the daytime. Transient guests arrive late in the afternoon or early evening and from experience a manager can turn on the coolers in time to take care of his anticipated guest load. Thus he only pays for the cooling he needs. Guests may set temperatures to suit themselves.

Said the manager of Old Faithful Inn at Phoenix: "Our room units are wonderful. Each guest can suit himself about using them. Surprisingly, some don't want air conditioning."

For a group of cottages installation costs are lower for room units because no ducts or plumbing are necessary. If a central unit is installed for dispersed cottages, the cost of piping is high.

Because of their low initial cost and great flexibility, room coolers are almost standard equipment in new motels throughout the South and Southwest and in the hot valleys of California. Most units are installed through the wall under a window.

In new apartments window units have six advantages over central units, according to apartment owners and managers:

1. Original cost is lower. Owner of the Park Central Apartments in Phoenix, where 150 1-hp and ¾-hp units were installed in 95 apartments, said that low bid for a central system was $110,000 compared with the window-unit cost of $45,000 plus another $12,000 for heating.

2. Tenants pay the operating costs.

3. Tenants control their own apartment temperatures.

4. Owner saves duct space.

5. Window units are ideal, especially early in the game when not all apartments are rented. Unrented apartments are not cooled as they might have to be with a central system.

6. If cooling equipment becomes defective, only one apartment at a time is affected.

"But the servicing is terrible!"

"The cooling is great, but the service is terrible" said one apartment-house owner. "Everyone passes the buck. I have to pay $7.50 an hour to servicemen." Said another: "We saved on our original unit costs but we are sure the maintenance is going to cost more than we have figured. We are amortizing over ten years." Owners everywhere recognize that room coolers are like automobiles: the older they grow the more servicing they need.

These remarks emphasize the importance of buying units from a dealer who takes responsibility for servicing and who has a long-term interest in protecting his own reputation. In the New York area 1,000 window units were installed in 362 units of Robert Metrick's Long Island apartments (AF, April '53) and both the manufacturer and the local dealer are anxious to protect the firm name. As a result the installation was well done and service calls, which have been few in the first four years, are handled efficiently. Tenants and landlord are happy over their arrangements. As with most apartment installations, the superintendent's office changes filters and makes minor adjustments, but any mechanical troubles are taken care of by a dealer who services all units in that county for the factory. In the Metrick apartments ½-hp coolers were built into a 28" x 15" opening under the windows. Installation was $57 each plus $25-30 for wiring.

What to look for when you buy room coolers

Anyone in the market for room coolers has such a wide choice today that he is likely to be confused. Prices vary so much that he

Country Club Manor in Phoenix has a 1-ton unit in bachelor apartments and two in larger apartments. All are built into the wall (as shown above). Tenants report they worked fine, even when temperatures were 110°. Operating costs: $9 a month for 2 tons.

Park Central Terrace Apartments in Phoenix have a 1-hp room cooler built into the wall of each living room and a ¾-hp unit in each bedroom of the 95 apartments. The entire installation cost $45,000 plus $12,000 for wall heaters, in contrast with a bid of $110,000 for a central cooling and heating system. The builders prefer window units for these apartments, but use central units in their one-family houses.

sense for new motels and apartments

may be tempted to buy the cheapest models on the assumption that all makes of one size are alike.

In any market analysis the following should be considered:

Reputation of manufacturer is of top importance. The room-cooler field has been like a California gold rush and everyone is getting in on the act. Buy from a firm you know will back up its product. Most firms now give a five-year warranty, but it must be backed up by local dealers.

Reputation of the dealer who installs and services the unit is equally critical. Your entire success with air conditioning will probably depend upon the dealer-serviceman. Some motel and apartment owners who grumble about poor service failed to arrange for service or chose the wrong man.

Cost per ton of cooling should be an important criterion, but is almost impossible to determine. Just because several firms use the same compressor and claim ¾ hp of cooling does not mean that each produces ¾ ton of cooling. The Btu output claimed in an advertising folder is not always delivered, according to the Bureau of Standards which made tests of units and found some considerably better than others. There still is no one standard for measuring Btu output of coolers used by all manufacturers.

Many 2-hp water-cooled *central* units produce 2 full tons of cooling but a ½-hp air-cooled window unit does not necessarily produce ½ ton of cooling. So be sure not to confuse horsepower and tons.

Flexibility of air control permits adjusting the face of a unit so air may be deflected up or down, to one side or another. Such an adjustment increases the efficiency of the cooling.

Noise level is always a consideration, and some units are much quieter than others.

Ease of maintenance and changing of filters should be looked into. How much maintenance is required? Better ask an owner who has installed a group of units. There are two kinds of filters in common use; some can be washed periodically and used permanently, others cannot. Each seems to have some advantages.

Centrifugal or propeller fan? Experts debate which puts out more air. Experts also debate whether the volume of air (cfm) is significant. Some believe that a unit producing a lower cfm is doing a better dehumidifying job, because as less air passes over the coil, more moisture is removed from the air.

One compressor or two? Similarly there is lack of agreement as to whether units having two compressors do a better job on removing humidity.

Heating as well as cooling? Is a unit with a heating coil better than one without? Probably the answer depends on geographical areas and whether there is another heat source.

Size of unit and does it project into room? Coolers with small dimensions may not work so well as larger units, although size seems to have little bearing on efficiency. Experienced dealers who handle all types of units say that some of the older models which projected into the room gave better air distribution than some of the new flush models.

Fresh air alone? Most users consider it an asset to be able to pump in fresh air without having the cooling unit turned on. Most units can do this.

Life expectancy and warranty? As most firms give a five-year warranty, find out precisely what it covers. But will the machine fall apart during the sixth year or last until the tenth? Probably no one knows because so few coolers have been in steady operation that long.

AIR CONDITIONING SMALL HOMES

When designing a small home that is to be air-conditioned, many important factors must be considered to achieve economical installation and low operating costs. A system controlling the temperature, humidity and filtering of the air is adequate for home conditioning.

Units with very accurate controls, as used in industrial or large commercial installations, are not required for small residences.

A house to be efficiently and economically air-conditioned should be designed so that the heat gain is as low as possible. This is achieved by proper orientation, location of glass areas, and insulation and ventilation of roof. Natural elements such as trees, planting and water areas should be utilized to provide shade and cooling.

It is not necessary to have a sealed house or a square plan to air-condition efficiently. For the sake of economy and efficiency in the small home the center core plan is often advised. The central service core has the following advantages:

1. Economical structure
2. Grouped plumbing
3. Efficient ductwork
4. Flexibility of plan around core to utilize orientation

The air-conditioning unit should be located in the center of the plan to minimize ductwork and insulation. Oversize units are as inefficient as undersized conditioning units. The proper unit that will operate steadily, rather than in surges of cooling periods, will provide better results, because between surges humidity builds up and destroys the comfort balance. Ideal interior conditions are 75° & 50% humidity.

The cost and availability of electricity and water should be obtained to estimate operating costs of equipment. If supply of water is limited or expensive, conditioning systems with water saving devices are necessary.

ELEMENTS OF DESIGN

Sun should not strike glazing of the building. See "Sun Shades and Supplementary Shading Devices" by H. R. Sleeper.

Roofing materials should be chosen with regard to reducing heat gain. A white or light colored roof will reflect much more of the sun's heat than a darker one. The roof is the greatest source of heat in the dwelling.

Moisture accumulated inside dwellings should be controlled. Stoves and ovens should be force vented. A bathroom exhaust is also advisable. Clothes dryers should be directly vented.

An electric cooking range gives off less heat into the room than a gas range. A ventilating fan can be wired to operate in conjunction with cooking units.

Walls should be insulated with 2" to 3" of insulation or equal. Roof overhangs over windowless, insulated, light colored walls are not justified in regards to interior heat gain.

Some operating sash should be installed for use during pleasant seasons and in event of possible power failure. A completely sealed house can be efficient but has certain psychological disadvantages for the average person.

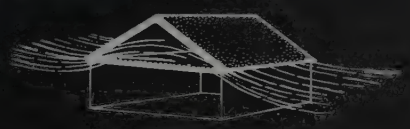
Windbreaks should be considered, to protect North glazed walls from direct winter winds.

A house designed with North-South orientation will usually have a lower heat gain. The summer heat gain of East and West walls are equal. Trees affecting site should be studied.

AIR CONDITIONING SMALL HOMES

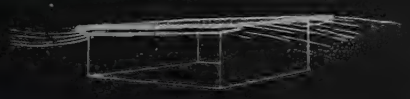
ROOF SECTIONS

DOUBLE PITCHED



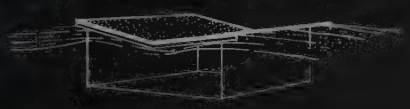
1. Most efficient means of roofing, when attic space is utilized as vented air space. Partial protection is offered from the sun's low rays.
2. Eaves, gables and attic area should be vented and 4"-6" of insulation above ceiling is recommended.
3. Rigid insulation on top of planking is required when exposed plank and beam system is used. This type of construction defeats some of the advantages of the pitched roof, in reference to air conditioning.
4. White, smooth, roofing surface has the lowest heat gain of roofing materials.

SINGLE PITCHED



1. Orientation of roof pitch can be used to advantage, by orientating pitch to be least affected by direct sun's rays.
2. Eaves should be fully vented and ceiling should be insulated.
3. Roofs without proper insulation, air wash, or reflective properties will prove a detriment to the air-conditioned house.
4. Rigid insulation as much as 6" thick is recommended when venting or an airwash is inadequate or impossible.

INVERTED PITCHED



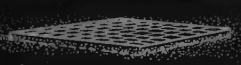
1. Some difficulty in airwashing and venting but orientation can improve efficiency. Because of increased wall area the heat gain should be considered.
2. Eaves should be fully vented.
3. Rigid insulation as much as 6" thick is recommended when venting is inadequate.
4. Trees provide shading and are recommended as a control on all dwellings.

FLAT

1. Because of venting problems flat roofs permit 25-50% more heat gain than a pitched roof on the same site.
2. Eaves should be fully vented.
3. Rigid insulation 3"-6" thick is recommended when venting is inadequate or exposed plank and beam is used.

FLOOR AND FOUNDATION SECTIONS

SLAB ON GRADE



1. Floor slab construction reduces total cooling load about 10%.
2. Permits efficient use of perimeter or direct duct distribution system.
3. Slab stores up cooling effect over night, helps cool home next day.

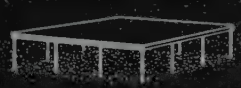
CRAWL SPACE

1. Some conditioning units may be installed in crawl space.
2. Duct work accessible for inspection and repair.
3. Ducts should be insulated to prevent loss of heat or cold.
4. Temperature control is accomplished with less lag than a slab on grade installation.
5. If ducts are left uninsulated and crawl space is used as plenum, venting of space is unnecessary.

FULL BASEMENT

1. Permits installation of conditioning unit in basement and easy access to ductwork.
2. Duct work should be insulated.
3. Temperature control is accomplished with less lag than slab on grade installations.
4. All excavations should be dry to prevent excess moisture from affecting humidity balance of air conditioner.

ELEVATED FLOOR



1. Floor must be insulated and figured as wall area, in reference to heat loss, when area is exposed.
2. System lacks the property to retain heat or cold.
3. If duct work is in floor it must be insulated.

VENTILATION REQUIREMENTS

AIR-CONDITIONING ROOM — Vent for combustion and fumes. Requires open gravity vent. Constant ventilation desirable.

BATHROOM — Vent for watervapor, heat, and odors is recommended: 100 c.f.m. louvered fan wired to light.

CLOTHES DRYER — Vent for heat and lint. An open gravity vent to exterior required.

CLOTHES WASHER AND SINKS — Direct venting not necessary unless the equipment is used a great deal.

KITCHEN RANGE — Vent for moisture, heat and odors. The vent fan may be wired to operate simultaneously with electric range & oven.

FIREPLACE — Not necessary to force vent unless fireplace is used during cooling cycle.

Three pages of first principles, based on HOUSE & HOME'S "five top priorities" article (Aug. '53) provide rules of thumb for

house+home

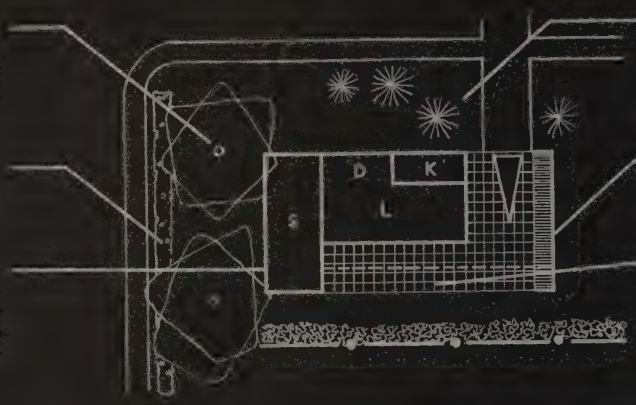
AIR CONDITIONING SMALL HOMES

An air-conditioned house should not sacrifice a view or good orientation for the sake of cooling efficiency. If conflicts due to such problems arise, they may be solved by the use of planting, sun shading devices, carports or other surrounding structures.

Deciduous trees provide shading in summer and pass the warm sun rays in winter. They provide excellent control and are especially desirable on east and west elevations.

Low summer sun in northeast and northwest may be interrupted only by vertical shades such as hedges, fences.

Evergreens provide ideal wind and visual barriers year round and are suited for North and Northeast orientations. Below are examples of controlled sites utilizing the above mentioned factors.



DECIDUOUS TREES
Provide shade on roof and general lowering of heat gain from western orientation. Permit partial sun in winter.

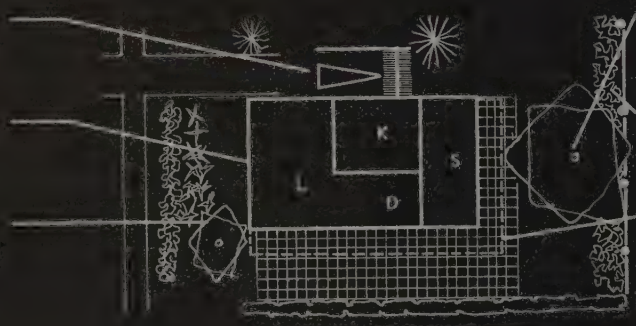
SHRUBS OR FENCES
Protect house from low sun's rays and are a visual barrier.

INSULATED WALL
May be windowless or with small high windows for light. Wall is a sound and visual barrier for the sleeping area.

EVERGREENS
Break north wind and provide partial visual barrier.

STORAGE WALL
Blocks the morning sun's rays and increases privacy of living areas.

TERRACE
Faces southern exposure, with roof overhang protecting living area. Fence and planting provide privacy.



CARPORT
Provides windbreak on North and may protect entrance.

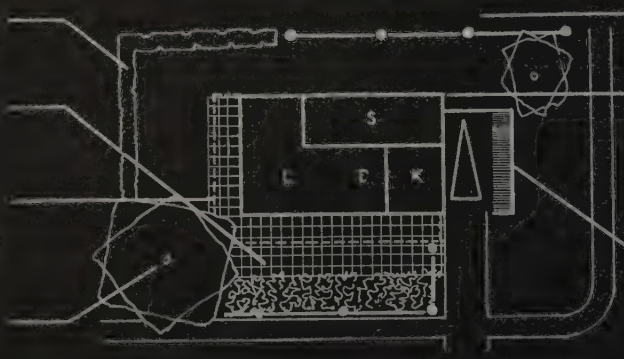
INSULATED WALL
Controls western sun and increases privacy.

SHRUBS AND TREES
Are natural sun barriers for living area and terrace.

DECIDUOUS TREE
Limits morning sun and provides Northeast wind barrier.

FENCE AND PLANTING
Visual blocks and they control low sun rays for sleeping area.

OVERHANGS
On South and East control sun in the living and sleeping areas.



SHRUBS
Partially control low sun rays on West and are visual barriers.

TERRACE
Located on South, shrubs provide visual barrier.

OVERHANG
On South and West protects living and kitchen areas from all but low sun rays.

DECIDUOUS TREES
Shade terrace and permit cooling of terrace area.

FENCE
May be used as visual barrier off street.

SOLID WALL
May be windowless or have small windows for light. The solid wall permits closer building to lot line, still retaining privacy.

CARPORT AND STORAGE WALL
Provides privacy and control of morning sun.

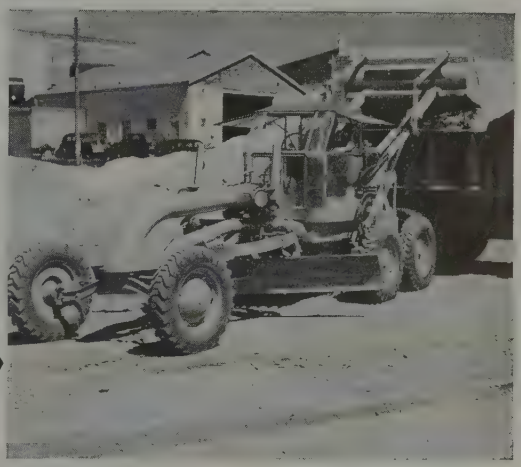
HERE ARE 23 COST-CUTTING MACHINES TO FIT YOUR NEEDS...

From the broad line of Allis-Chalmers equipment there are sizes of machines with attachments to efficiently handle any excavating or earth moving, speed and mechanize many phases of construction. These versatile workers are sold and serviced through a nationwide dealer organization.

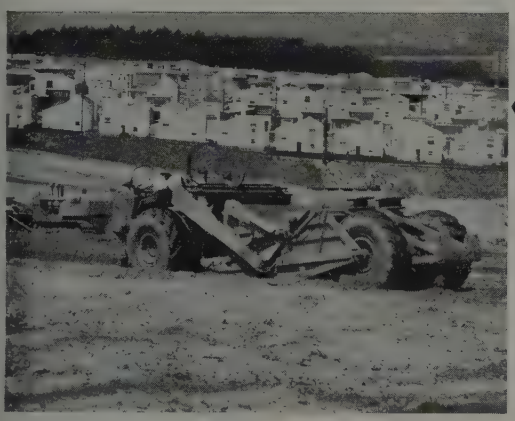
...for handling a variety of jobs

TRACTOR SHOVELS — The 1-cu yd HD-5G excavates basements, backfills . . . moves, loads and spots materials . . . digs trenches with quick-change trench hoe . . . handles many jobs from preparing raw land to final landscaping. Twelve interchangeable attachments make the HD-5G a fleet of machines in one. Three larger sizes of Tractor Shovels also available.

MOTOR GRADERS — The low-cost 50-hp Model D builds roads, rough and finish grades, landscapes, backfills, cuts drainage ditches, slopes — saves time and money on many building jobs. Rear-mounted hydraulic ⅝-yd loader attachment multiplies the Model D's usefulness. Three larger diesel graders also available.



...for big-capacity earth moving



MOTOR SCRAPERS provide a low-cost, fast means of moving big quantities of dirt—as in the preparation of raw land for larger housing developments. The TS-300 shown here carries 18 cu yd at speeds up to 22.5 mph. Also available: a smaller size Motor Scraper and two sizes of Motor Wagons.

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- ☐ HD-15, 109 drawbar hp
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- ☐ HD-5, 40 drawbar hp

TRACTOR SHOVELS
- ☐ HD-20G, 4 cu yd bucket
- ☐ HD-15G, 3 cu yd bucket
- ☐ HD-9G, 2 cu yd bucket
- ☐ HD-5G, 1 cu yd bucket

MOTOR GRADERS
- ☐ AD-40, 104 brake hp
- ☐ AD-30, 78 brake hp
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- ☐ D, 50 brake hp

MOTOR SCRAPERS
- ☐ TS-300, 14 cu yd struck
- ☐ TS-200, 10 cu yd struck

MOTOR WAGONS
- ☐ TW-300, 14 cu yd struck
- ☐ TR-200, 11 cu yd struck

PULL-TYPE SCRAPERS
- ☐ Model 624, 18 cu yd struck
- ☐ Model 314, 14 cu yd struck
- ☐ Model 615, 12 cu yd struck
- ☐ Model 612, 9 cu yd struck
- ☐ Model 106, 6.1 cu yd struck
- ☐ Model 44, 4 cu yd struck
- ☐ Model 24, 2 cu yd struck

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WHEEL TRACTORS
- ☐ 18, 18 drawbar hp
- ☐ B, 20.6 drawbar hp

POWER UNITS
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- ☐ Send me name and address of nearest dealer.
- ☐ Have dealer arrange with me to demonstrate..... (indicate equipment)

Name.....

Address.....

City..... State.....

REVIEWS

MODERN GARDENS—Masterworks of International Garden Architecture. By Peter Shepheard, A.R.I.B.A., A.M.T.P.I., A.I.L.A. Frederick A Praeger, Inc., 105 W. 40th St., New York, N.Y. 144 pp. 8¾" x 11¼". Illus. $9.50

Landscape architecture, keeping pace with changes in living and changes in building design, has gone a long way from the formal Italian gardens and overgrown arbors of less-realistic eras. Today it is the profession of making outdoor space attractive and at the same time usable, convenient and easy to maintain.

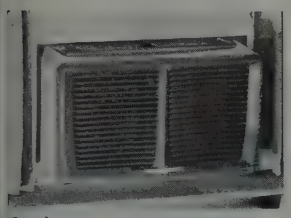
In this handsome collection of photographs and plans are many ideas for handling the space around and between buildings. Here are 34 private gardens, many of them on small suburban or city lots, plus details from a dozen more, and a handful of nonresidential works including the Festival of Britain and the renowned public parks of Stockholm. The book deals mainly with US, English and Scandinavian gardens, with some examples from Brazil, Belgium, France and Switzerland. The US is represented by Thomas Church, Richard Neutra, Carl Koch, Christopher Tunnard, Roland Terry and Eckbo, Royston & Williams. Although the selections vary widely in appearance and locale, they illustrate common principles.

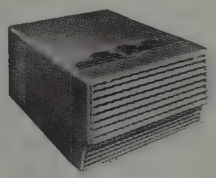
Author Shepheard, noted British architect, landscape architect and town planner, feels the landscape architect should have the same basic training as the architect (which he does in most American schools), that he should speak more strongly and constructively in the planning or rehabilitation of communities, that, as a "deputy of nature," he should take care not to upset her balance:

"Everywhere one can find housing spoiled by a complete absence of any understanding of what can and cannot be done with the space between buildings. One of the best qualities of the modern movement is its increasing awareness of the connection between the space within buildings and around them. . . .

"The modern garden should find its inspiration in the contemporary scene. . . . If it looks backward for a precedent it should not turn to the Renaissance gardens of Europe, in which kings and princes glorified themselves by subjecting nature to a symmetrical pattern, but to the gardens in which from time to time man has come to terms with nature and made her a partner to his design. For nature will come, if not as a partner, as a destroyer, crumbling stone and overgrowing all artificiality with moss and fern and ivy. We should turn to the enclosed courtyard gardens of southern Spain, modest and private paradises of stone and water and greenness, or to the village greens of England, or to the parks of the English landscape movement, or above all to the gardens of China and Japan, which . . . achieve a miraculous degree of unity with nature . . . not of course to copy these, but to find that common attitude of reverence for and partnership with nature which informs them all."

The 21 room coolers (shown below) are representative of the far larger number of models available on the market today. There are cabinets to suit all tastes.


Crosley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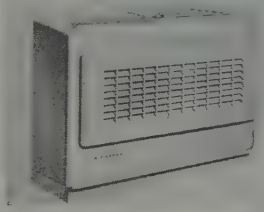
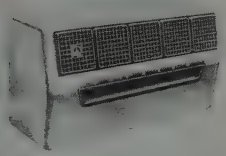

Mueller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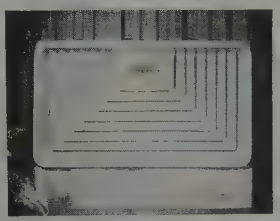
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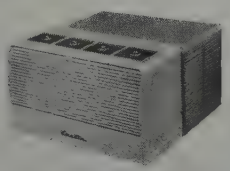
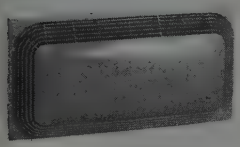
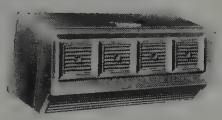

Curtis


Carrier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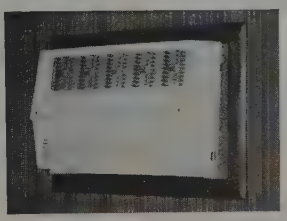
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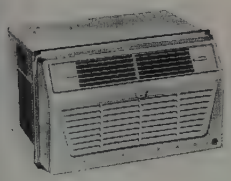
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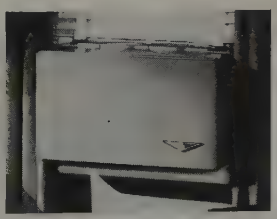
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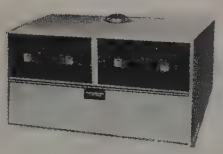
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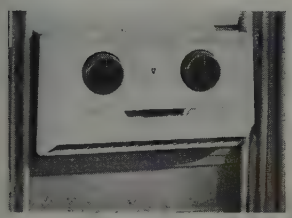
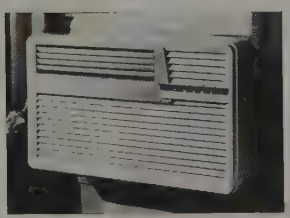

Vornado (O. A. Sutton Co.)


Kelvinator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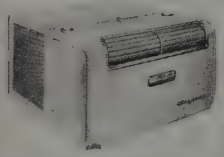
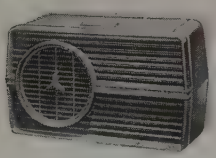

Frigidaire


RCA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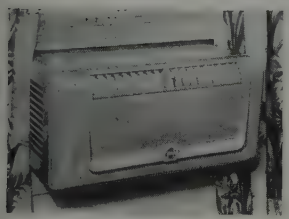
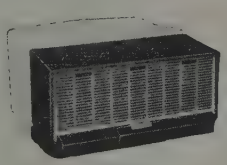
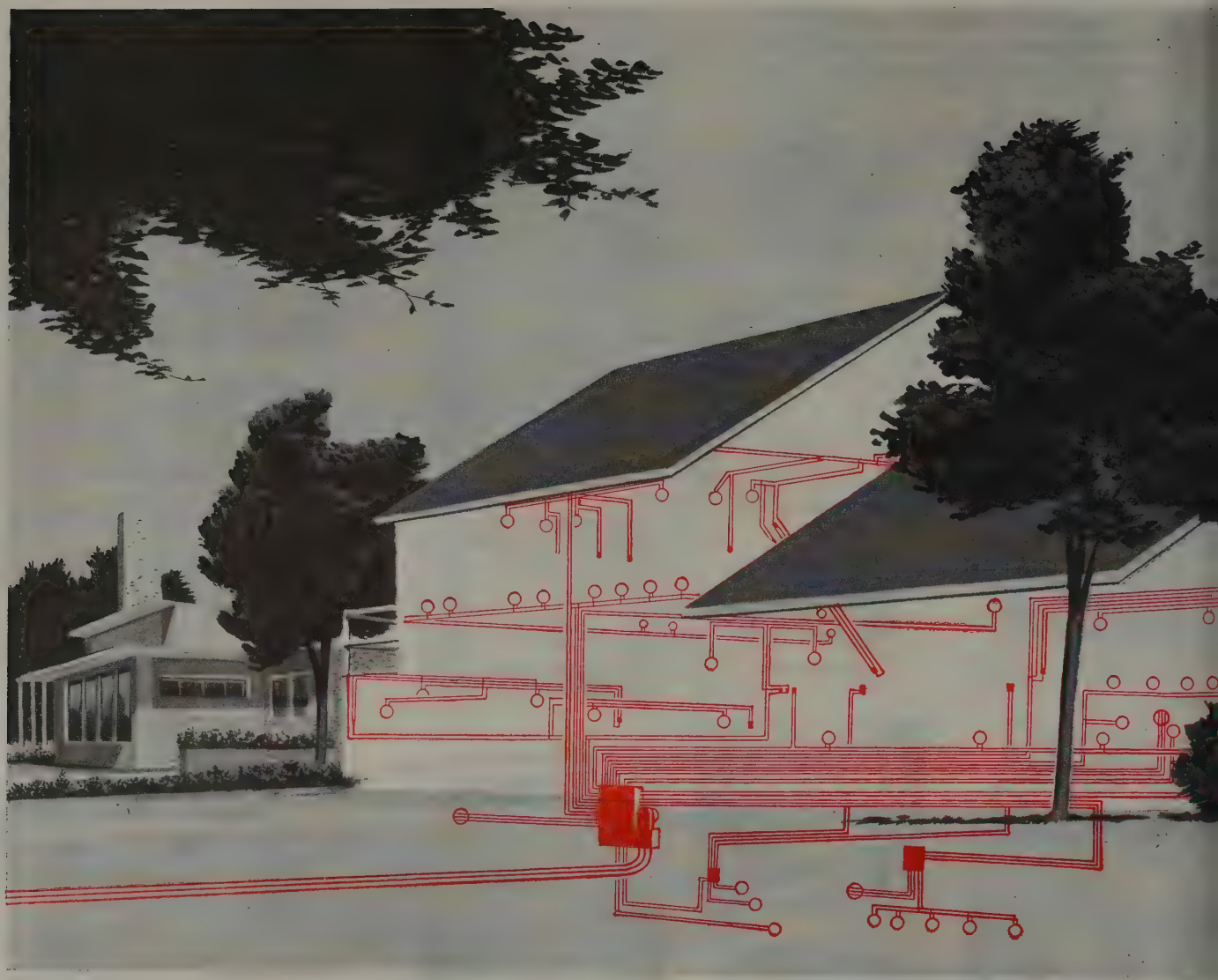

York


G.E.


Typhoon



Above all... today's home is a

HOUSE OF

What does the average buyer of your homes look for?

Good construction? Sure! So you give him seasoned lumber, copper plumbing, complete insulation, careful workmanship. These all help sell your house.

BUT there's something else every home buyer expects to get today. It's the convenience and comfort that only modern *electrical* living can bring. And that means a wiring system built to deliver *enough* current to *every* place where it can be conveniently used.

If your houses are to meet the standards of today's .. and *tomorrow's* . . . market, they must have large enoug wires to carry full loads of current. They must hav enough circuits to handle the dozens of appliances ever housewife uses today . . . as well as those she will b bound to want in the not-too-distant future. And, ther must be plenty of outlets and switches for easy use o these appliances.

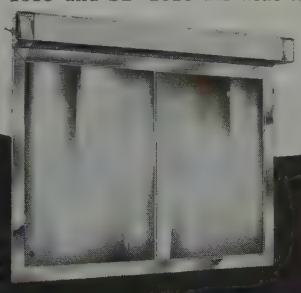
Adequate wiring is a *sales plus* for the houses you ar now building. It's a reputation booster for the houses yo

the duette custom . . . by MIAMI-CAREY

Sensational new sales-builder

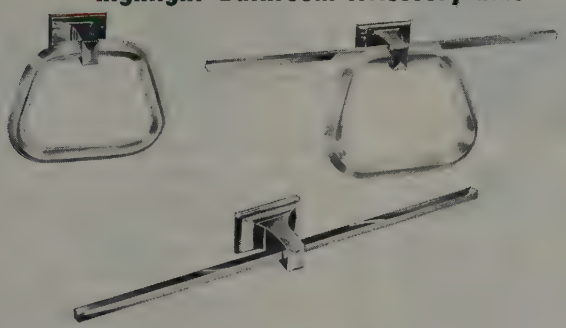
Never before such striking beauty, quality and convenience features as in these new Miami-Carey *duette* bath-room cabinets! Your prospects will go for the roomy *twin* storage compartments, *twin* sliding mirror doors, jewel-like stainless-steel frames, new translucent lighting. Feature *duette* glamour and convenience in the bathroom—get faster, easier sales! The *duette* comes in Custom and Junior styles (illustrated), and in the budget-priced *duette* Deluxe Model SD 1818 and SD 1818 FL with light (not shown).

duette Custom Model SD 1820 FL with fluorescent tubular light, curved translucent shade, electrical convenience outlet and switch.



duette Junior Model SD 2014 FL, slightly smaller than Custom; only necessary to cut out one section of stud for installation. Fluorescent tubular light, translucent shade, outlet and switch.

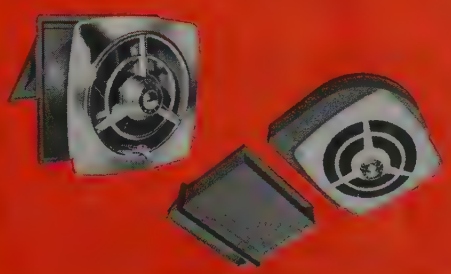
NEW! Sparkling Lucite Towel Rings highlight Bathroom Accessory Line



Feature tomorrow's Fashion Leaders today. These new Miami-Carey chrome and Lucite accessories offer smartness, sparkle and top quality to impress every prospect . . . help boost sales. See them on display at your Carey dealer's.

A complete MIAMI-CAREY Ventilating Fan Line

Choose a fan for every type of installation—at prices that hold down your costs. Time-saving installation features include snap-in assembly of propeller and motor unit, 1-piece grille (either baked-on white enamel or chrome). Here's smart appearance combined with quality, smooth operation, long life!



MAIL THE HANDY COUPON NOW FOR COMPLETE INFORMATION

MIAMI Carey

Quality Bathroom Cabinets, Mirrors and Matching Accessories • Access and Laundry Chute Doors • Kitchen and Bathroom Ventilating Fans • Attic Ventilating Fans • Bathroom Heaters

MIAMI CABINET DIVISION
The Philip Carey Mfg. Company, Middletown, Ohio, Dept. HH-8

Gentlemen:

- ☐ Give me all the facts on your complete, nationally advertised line. Include your illustrated literature.
- ☐ You've sold me. Have your Miami-Carey Representative call

NAME _____

FIRM _____

ADDRESS _____

CITY _____ ZONE ____ STATE _____

REVIEWS

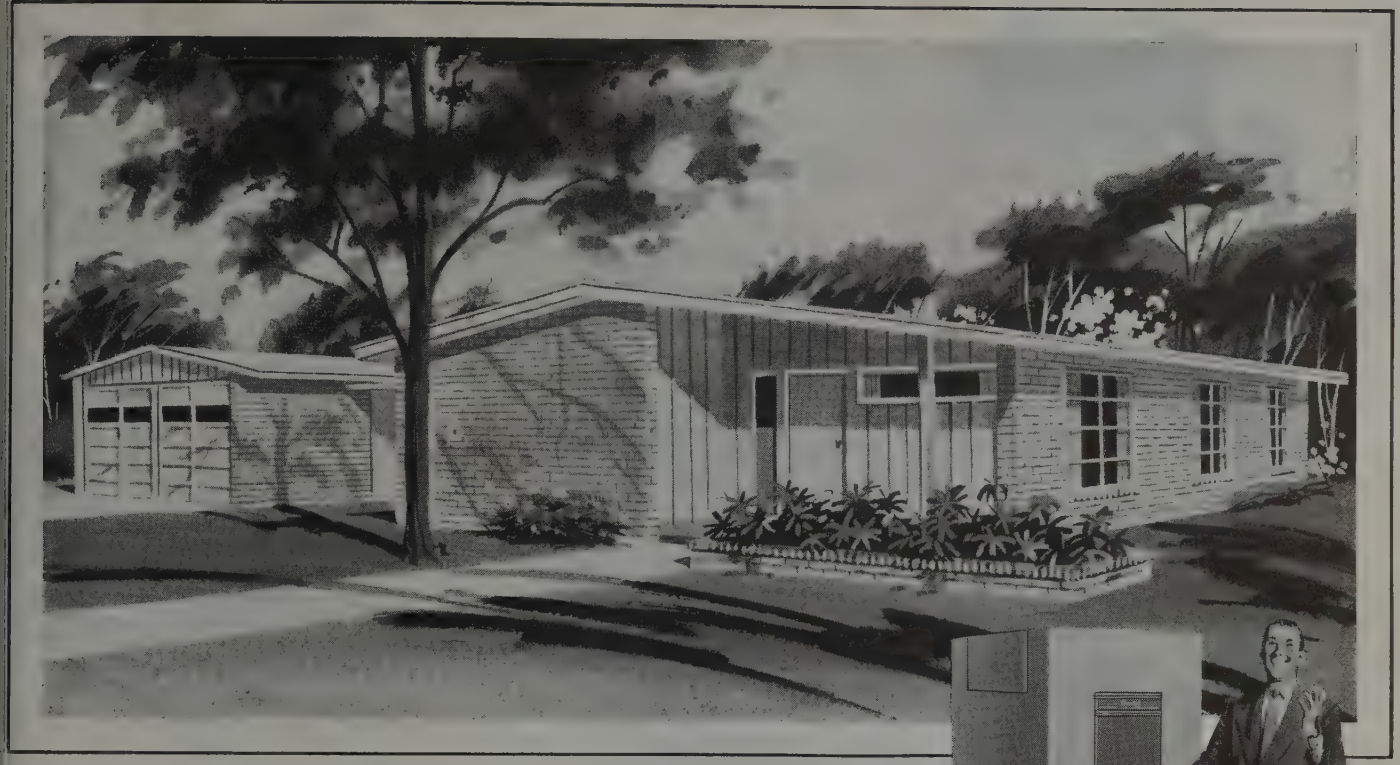
GARDENS "The Things We See" series, No. 7. By Lady Allen of Hurtwood and Susan Jellicoe. Penguin Books, Baltimore, Md. 64 pp. 7" x 8½" Illus. $1.25

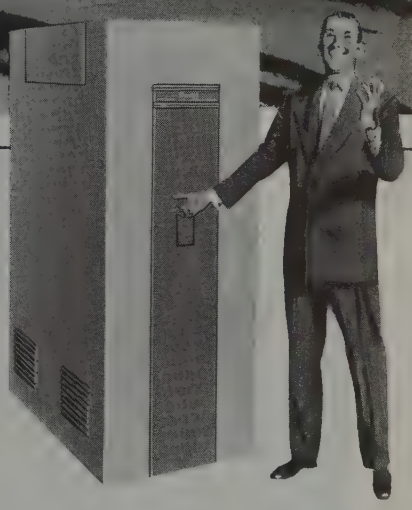
This inexpensive little picture book (100-odd photographs) is crammed full of good ideas for outdoor planning. In house landscape, it touches lightly on everything from cheerful window boxes to lavish swimming pools, but most eye-opening for US readers are its ideas for public spaces, a field in which Europeans have long surpassed us. Here are simple, handsome settings for apartment buildings, schools and factories; corners of public parks designed for sun, chess or fountain watching, benches comfortable enough to keep people off the grass, litter baskets gay enough to attract litter. From Copenhagen there is an organized "junk playground" where children can build houses and dig caves, from Stockholm an abstract "jungle-gym" sculpture covered with climbing kids. There are restaurant gardens, roof gardens for factory and office workers, waiting gardens for railroad commuters, paddling pools for youngsters, designed to bring summer pleasure into the residential area. And there are quiet gardens for the dead that make the average cemetery look pompous and cluttered. One thing is obvious from the pictures: if any outdoor space is carefully and beautifully designed, people will enjoy it enough not to abuse it.

Gustave Ammann

Stepping stones cross a quiet pool

Wading pool as a central focal point for an apartment community





Why was the "Wonderair Home" AT AIR-CONDITIONED VILLAGE, Austin, Texas one of the First homes sold?

Servel Wonderair *All-Year*® Air Conditioning does it again! The **Wonderair** Home—Servel-equipped—has already attracted so much attention that it was one of the first homes in "Air-Conditioned Village" to be sold.

Sound architecture, outstanding construction, and the exclusive advantages of Servel Air Conditioning make an unbeatable combination.

Architect Eugene Wukasch and Builder C. Ben Hibbetts have given charm and livability to this compact home through the many features they have included in it. *By installing Servel Air Conditioning, they achieved not just one, but SIX important sales features. And ALL these features occupy only 8.7 sq. ft. of floor space!*

What are these features? Cooling in summer, heating in winter; dehumidification; cleaning and circulation of the air; and ventilation with outside air.

For a few of the other distinctive features added by Servel, see the box at left. For more information on Servel **Wonderair** *All-Year* Air Conditioning, send coupon.

OUTSTANDING SERVEL FEATURES

- No moving parts (long life, vibration-free)
- Unique absorption principle of refrigeration
- Uses gas—the clean, economical fuel
- Simple lever switches unit from heating to cooling
- Occupies only 8.7 sq. ft. of floor space
- Protected by five-year warranty

Servel

the name to watch for great advances in

AIR CONDITIONING √ REFRIGERATION

SERVEL, INC., Dept. HH-84, Evansville 20, Indiana

Please send further information on Servel Wonderair *All-Year* Air Conditioners.

Name_____

Firm_____

Address_____

City_____ Zone_____

County_____ State_____

NEW PRODUCTS *continued from p. 151*

ernization market as well as to new houses.

The machine has an air supply capacity of 800 cfm, comparable to other 2-ton units, and will effectively cool up to 1,500 sq. ft. in houses really designed for air conditioning (see Air-conditioned Village, p. 126). First costs ($985 retail price) are claimed by the manufacturer to be 10% to 20% under those of full-rated competing models, in addition to the operating savings.

Electronics experts

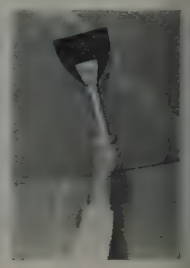
The revolutionary *Temtron* is the product of the research facilities of Ultrasonic, which does the bulk of its work in electronic research and production for industry and the military, including the AEC. One floor (50,000 sq. ft.) of their factory is being devoted to production of the *Temtron*, and the output goal is 1,000 units a month by this fall. A 3-ton unit will also be made, using either a 1½- or 2-hp compressor motor, as well as a smaller console model to compete with present window units. Distribution will be through normal trade channels.

Manufacturer: Ultrasonic Corp.
640 Memorial Dr.
Cambridge 39, Mass.

DRY-WALL TOOLS speed output, guarantee uniform quality joints

Getting gypsum board on the wall is the smallest part of the dry-wall job; concealing joints and nailheads takes far more time and labor. A complete line of eight dry-wall tools that do every operation mechanically from mixing of "mud" to finishing joints is now available on a leased basis, to builders and dry-wall contractors.

Originating with Stanley and Robert Ames,



continued on p. 186

HEAVIER SECTIONS

of

EXTRUDED ALUMINUM

Make Ualco Awning Windows ARCHITECT-QUALITY!

Ualco
U-AL-CO

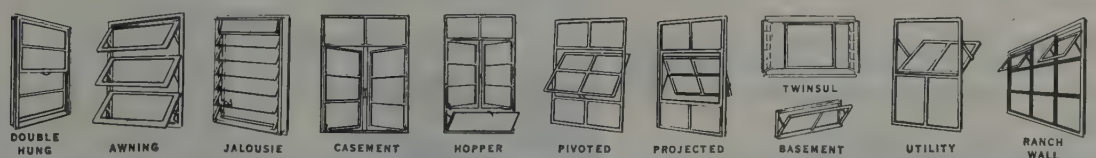
ASK ABOUT OUR ENGINEERING PLANNING SERVICE. DESIGNED TO ASSIST ARCHITECTS, ENGINEERS AND CONTRACTORS IN MAKING "TAKE-OFFS" AND SOLVING WINDOW PROBLEMS.

These awning windows do the job no matter what your commission—residential, commercial or institutional! That's because they're made of heavier extruded 63S-T5 aluminum! Ualco Awning Windows are precision-engineered, job-tested in buildings of all types. They never rust, rot or need painting. They'll do justice to your designing skill and remain a lifetime tribute to your reputation!

OTHER FEATURES: Exclusive Strip-Proof Operator unlocks, opens, closes and locks vents in any position up to 90 degrees. Completely weatherstripped with Koroseal. For night or inclement weather ventilation, lower vent opens slightly while upper vents remain closed and locked. Integral fin completely surrounds window, takes brick fin and fin trim. Jiffy Quick Sill Clips slide in channel from each side; locate as many as wanted, where wanted. Easy to clean from inside.

SEE OUR CATALOG IN SWEET'S ARCHITECTURAL FILE 16A OR WRITE US FOR COMPLETE INFORMATION

SOUTHERN SASH SALES & SUPPLY CO. • SHEFFIELD, ALABAMA



Ualco THE WORLD'S LARGEST MANUFACTURER OF ALUMINUM WINDOWS

NEW PRODUCTS *continued*

Joint finisher spreads band of cement

who have been dry-wall applicators since 1938 (with over 60 million sq. ft. of dry wall installed by their company), the *Ames Taping Tools* are designed to apply cement to the joint, to embed the covering tape, then to feather out and finish the seam. Cement pumps are battery powered, and feed the adhesive evenly along the seam or onto nail-head depressions. One big advantage claimed is that novices can turn out acceptable joints almost immediately.

Nail spotting is turned into a production operation with a tool that lays "mud" over

Narrow tool tapes any corner

the nailhead, smooths it, and removes all excess as it goes. Using the tool, one man has spotted as many as 15 houses in one day. Progressively wider finishing tools used on each coat (four coats on butt joints, three on tapered) automatically provide a feathered edge. Sanders finish the job of smoothing joints before painting.

All tools have extension handles so that scaffolding is not necessary, even on ceilings. The cement hopper holds 5 gal. of joint cement, and instantaneously feeds working tools through a flexible hose. Taping tools hold up to 500′ of tape, which is pulled over two rollers at the tool head by pressure of the rollers against the wall.

Full line of tools for one crew (mixing hopper, and pump, taping tool, 7″-, 10″- and 12″-joint finishers, corner finisher, nail spotter and sanding block) can be rented for approximately $75 per month, with a deposit of $100 for safe return of equipment.

Manufacturer: Ames Taping Tools, Inc.
1325 Elmer St.
Belmont, Calif.

continued on p. 188

GENERAL MOTORS PRODUCTION SKILL SLASHES BUILDER COSTS WITH DELCO-HEAT

Automobile assembly line techniques assure lower bids from Delco on your heating contracts

The automobile production line has come to home heating! You can save dollars on every housing unit . . . save up to *thousands* of dollars on every project. Yet, with all these savings, you also gain in sales appeal and customer satisfaction. No other heating plants offer such proved and tested trouble-free comfort. No others offer the sales magic of the General Motors name. No others are so carefully engineered for modern installation in closet, alcove, utility room and basement. High, low or reverse flow models—gas or oil fired—your best bid will always be the Delco-Heat bid. Shown above is the gas fired Conditionair (Model GBC90-H). AGA-approved for close clearance application—only 25″ x 25″ x 67″. Why not call your Delco-Heat distributor today? Or write: Dept. HAH, Delco Appliance Division, General Motors Corp., Rochester 1, N.Y. In Canada, Delco-Heat, Toronto 13, Ontario.

GM
GENERAL MOTORS

DELCO-HEAT

For a good deal . . . deal with DELCO

. . . a complete line of automatic oil and gas fired conversion burners, Conditionair forced warm air furnaces and heating and cooling units, boilers, water heaters and electric water systems.

NEW PRODUCTS *continued*

GLASS TILE has color fused to back, is applied with thin bed mastics

Glasstyle combines an area-covering size (6" x 12") with the speed of the thin bed-setting method to bring another competitive wall surface to the bathroom/kitchen field.

All 12 colors are rich, but muted, and permanently embedded in the back of the glass. Tiles are spaced 1/16" apart, and grouting compound squeegeed into the beveled joints. Trim pieces can be cut from stock ⅛" thick tiles with a glass cutter to reduce inventories.

Price: 77½¢ per sq. ft. (except for peach and yellow, which need more color for opacity, and cost 91¢ per sq. ft.).

Manufacturer: Gateway Glass Co.
LaCrosse, Wis.

PACKAGED METAL LOUVERS sized for seven different roof pitches

Gable-end ventilation for any roof pitch from 2½′ in 12′ to 8′ in 12′ can be provided with one of the 22 sizes of *Louv-R-Pak*, which is factory-assembled complete with insect screen, and can be installed by two men in less than five minutes.

Base lengths of the units are sized up to 10′, and ¼" return on the top edge of the galvanized metal louver blade assures protection against blowing rains. Each unit is packaged in its own box for easy storage on the job.

Representative prices: 2½′ in 12′ pitch, $4.75 to $6.84; 5′ in 12′, $4.75 to $10.06; 8′ in 12′, $4.88 to $5.73.

Manufacturer: Louv-R-Pak Co.
P.O. Box 1841
Ft. Worth, Tex.

continued on p. 192

MUELLER BRASS CO. *Streamline*®

COPPER TUBE AND FITTINGS...

EASILY INSTALLED FOR *BOTH* SUPPLY AND DRAINAGE PLUMBING

The plumber who knows the advantages of Streamline copper tube and fittings is the man to call in for supply and drainage plumbing in the houses you design and build. For Streamline copper plumbing makes an efficient, neat and attractive installation that stays tight and leakproof, rust-free, clog-free and completely dependable for years to come. Prospective home owners prefer it . . . even insist on it because they know that an all-copper system will give them trouble-free service and last as long as the house they buy.

When you install Streamline copper plumbing, you usually save enough on installation time and construction costs to offset the slight additional cost of the copper tube and fittings. And you have a finished home that is far more salable because of the copper installation.

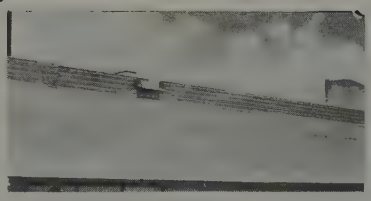
Write today for our latest catalog of Streamline plumbing and heating products.

127-A

MUELLER BRASS CO. STREAMLINE PRODUCTS

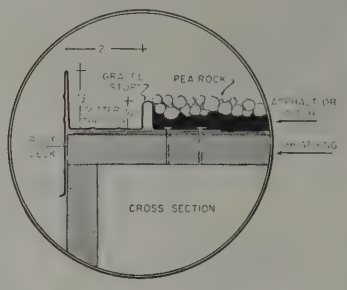
MUELLER BRASS CO. PORT HURON 6, MICHIGAN

NEW PRODUCTS *continued*



GUTTER for low-pitched roofs blends into fascia line

All the advantages of a gravel stop and gutter for the flat or low-pitched roof are retained in the *G-S Gutter*, without marring a clean, slim fascia line with a cumbrous water drain. Shaped like a short-legged "H," the galvanized gutter provides a ¾"-high gravel stop, and a 1½" x 2" channel for rain water. Spillway sections at 30' to 40' intervals vent precipitation, and conventional heads and downspouts can be attached, if desired.



Straight pieces in 10' lengths are easily cut with a hacksaw, and both inside and outside corners are available in addition to the spillways. All sections are bedded in roofing mastic, and overlap each other 2". Grooved blocks are provided for forcing the sections into a mechanical bond, but joints may be soldered if specified by the architect.

Architectural lines of contemporary flat-roofed house are unmarred by gutter.

The slim, fluted lines of the *G-S Gutter* extend some 3" over the fascia, and can be painted to blend or contrast with it.

Prices: standard 10' lengths, $2.70; spillways, $1.25 ea.; inside and outside corners, $1.45 ea. Freight charges may raise this as much as 10% to 15%.

Manufacturer: Agar Mfg. Co.
390 N.E. 71st St.
Miami 38, Fla.

continued on p. 194

A.I.A. 23-G

KENCORK floors cost no more than hardwood when installed over concrete on grade

Photograph: MAURICE BAUMAN

Interior Design: F. STANLEY HAGGART

Makes homes worth more... sell faster...trade-in easier

Kencork, one of the most desired floors known today, adds dollars and cents value to any home ...by offering advantages and features that can't be equalled. Only *pure* cork is used...compressed to a fraction of its original bulk...without artificial binders. The result is a tile that yields rather than abrades under pressure ... cleans easily ... helps insulate rooms in all weather...remains quiet, warm, dry and comfortable underfoot. Kencork is preferred, too, for the beauty and subtlety of its random shadings...its remarkable ability to fit perfectly with any room scheme, color or period.

Specifications and Technical Data

Installation: Over any smooth, dry interior surface—over radiant heating—over concrete in contact with the earth when new KenSet Adhesive* is used.

Thicknesses: 3/16" and 5/16": factory or natural finish.

Sizes: Standard floor tile sizes are 6" x 6", 6" x 12", 9" x 9", 3" x 18", 12" x 12" and 12" x 24"...wall tiles in same sizes.

Sample tiles available on request. Get your supply from the Kentile, Inc. Flooring Representative nearest you. He's a trained and experienced expert...fully qualified to help you solve any and every flooring problem that may arise. For his name and phone number, contact the nearest Kentile, Inc. regional office listed below.

KENCORK®

FLOORS | WALLS

Kencork is the floor your clients know and want...

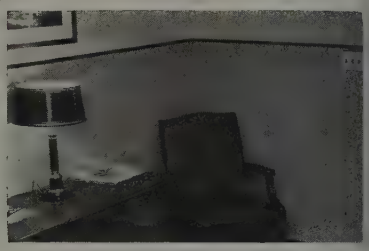
BACKED BY MORE FULL-COLOR ADVERTISING THAN ANY OTHER CORK FLOOR

KENTILE * SPECIAL KENTILE * KENCORK * KENRUBBER * KENFLEX * KENFLOR

*Reg. U. S. Pat. Off.

KENTILE, INC., 58 Second Avenue, Brooklyn 15, New York • 350 Fifth Avenue, New York 1, New York • 705 Architects Building, 17th and Sansom Streets, Philadelphia 3, Pennsylvania • 1211 NBC Building, Cleveland 14, Ohio • 900 Peachtree Street N.E., Atlanta 5, Georgia 2020 Walnut Street, Kansas City 8, Missouri • 4532 So. Kolin Avenue, Chicago 32, Illinois • 4501 Santa Fe Avenue, Los Angeles 58, California

NEW PRODUCTS *continued*



GLASSLIKE WALL FINISH sprays on, hardens into seamless surface

Any area that demands a highly glazed wall surface can now be coated with a new sprayed-on permanent wall finish that gives a marble-hard, seamless surface.

Selco Vitro-Glaze starts with the normal brown coat or cement plaster wall or any other rigid masonry surface, over which is

sprayed a sizing agent. After setting over night, the wall is sprayed with a resin which acts as an adhesive for Ottawa flint shot sand, applied while the resin is tacky. This is followed by the color coat (or coats) and finally the wall is sealed. Areas not to be covered are masked with tape and paper.

The resulting wall is unaffected by temperature, alkalis or acids, and may be washed easily with soap and water, like other ceramic or vitreous surfaces.

Price: 85¢ per sq. ft. installed, in areas of 1,500 sq. ft. or more.

Manufacturer: Selby, Battersby & Co.
5220 Whitby Ave.
Philadelphia 43, Pa.

ELECTRONIC GLUING GUN works like spot welder, uses 120-v. house current

On-the-job gluing of wall paneling, laminates for cabinets or counters, even hardwood flooring is now possible and instantaneous curing is provided by the *Bond-O-Therm*, an electronic

continued on p. 200

It's a snap

To Install STEELCRAFT SPACEMAKERS!

Steel Sliding Closet Doors with NEW WOOD GRAIN FINISH

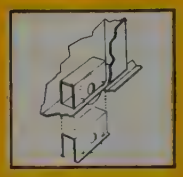
With the new SNAP-IN Hardware (shown below), you now get all the space-saving, cost-cutting advantages of the original Steelcraft Sliding Door plus these ALL-NEW features in the most complete line of steel sliding closet doors on the market.

FULL LINE FEATURES

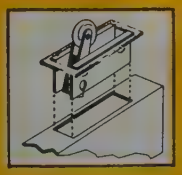
- **NEW BIRCH GRAIN FINISH**
  A beautiful reproduction of the natural grain completely finished and lacquered.
- **PRIME FINISH ONLY**
  For those who prefer to paint.
- **LOUVERED DOORS**
  For heating equipment and where greater air circulation is desired.
- **8′ CEILING HEIGHT**
  To make ALL space available and eliminate drop ceiling.
- **SET UP STEEL DOOR FRAME**
  Optional.
- **VARIETY OF OPTIONAL LABOR AND COST SAVING SIDE TRIMS**

STEEL Craft
BIG U.S. PAT. OFF.

All doors with . . . NEW Snap-In Hardware



SNAP-IN NYLON ROLLERS



SNAP-IN GUIDE KEEPER

SNAP-IN PLASTIC DOOR PULLS

To assure smooth, *quiet* operation and prevent derailing, Steelcraft Sliding Doors now come with new snap-in top head guide equipped with spring-loaded nylon plastic rollers. The bottom hardware consists of nylon plastic rollers encased in a snap-in type housing. New plastic door pulls snap into each panel quickly and easily. Each panel has 2 door pulls.

All hardware is snapped in place in a matter of seconds. No bolts or nuts to fool with . . . cutting installation time to a minimum. Steelcraft Steel Sliding Closet Doors are shipped complete . . . everything in ONE package . . . ready to install.

THE STEELCRAFT MANUFACTURING COMPANY
(in Greater Cincinnati)

MAIL THIS COUPON TODAY!

The Steelcraft Manufacturing Co., Dept. HH-854
9017 Blue Ash Rd., Rossmoyne, Ohio

Please send me full information on Steelcraft SPACEMAKER Sliding Steel Doors with new Snap-In Hardware.

Name..... Title.....

Company.....

Business Address.....

City..... Zone..... State.....

NEW PRODUCTS *continued*

glue-setting instrument. Completely portable, the generator can be wheeled anywhere on the job, and the glue gun weighs only 2 lb.

Similar electronic gluing devices have long been used by furniture and millwork shops, but were too complicated for adaptation to construction uses. *Bond-O-Therm* was developed to take advantage of new synthetic thermosetting resins.

Major savings to builders will come through labor savings. No nailing is required, no filling of nailheads and hammer marks in prefinished paneling. A wide range of surfaces, from soft fiber boards to the hardest laminates, all can be glued with this machine.

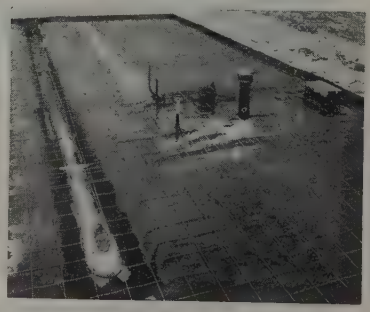
The 1,500-w. generator is only 19" x 23" x 30¢, uses regular 20-v. house current, and the air-cooled tube has a warranted life of 1,000 hours.

Price: $1,195.

Manufacturer: Industrial Electronic Engineering Corp.
2223 N. 31st St.
Milwaukee, Wis.

PAPER MEMBRANE meets FHA requirements for slab or crawl-space vapor barrier

Paper may sound like a poor barrier against moisture, but when the paper is tough kraft, when it is laminated with asphalt, and treated with a fungicide, it becomes acceptable to FHA as a vapor barrier.



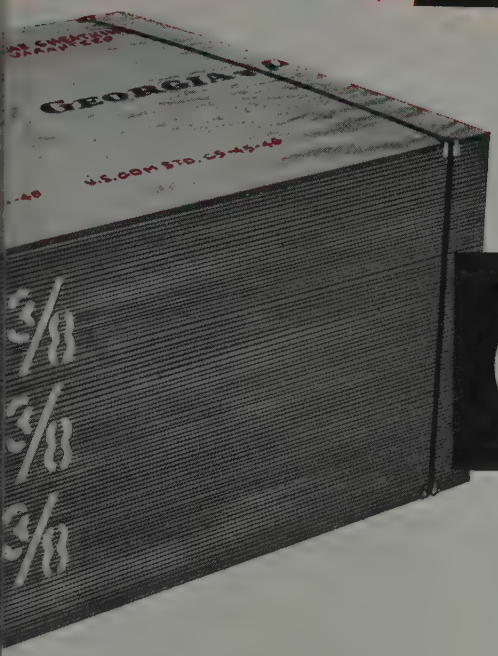
Called *Richkraft 65*, the material comes in five widths from 36" to 96", with single rolls covering up to 1,000 sq. ft. The paper is unrolled across the foundation, with edges lapped 6" and sealed, to give an in-place cost of 3¢ to 3½¢ per sq. ft., compared to 4½¢ to 6¢ for other vapor barriers.

Price: 2¼¢ per sq. ft. (material only).

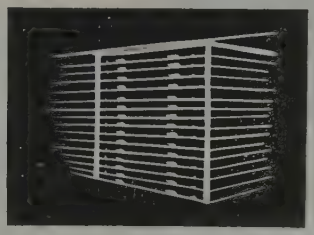
Manufacturer: The Richkraft Co.
510 N. Dearborn St.
Chicago 10, Ill.

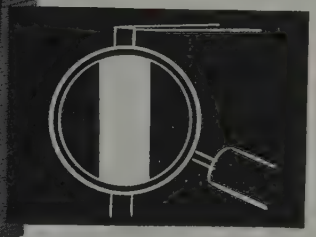
continued on p. 204

1 NEW GLUE — GP-77, a new formula phenol formaldehyde glue, gives far greater water and mold resistance, thus assuring a stronger, more durable plywood sheathing. Here is an all-weather sheathing requiring a minimum of protection.



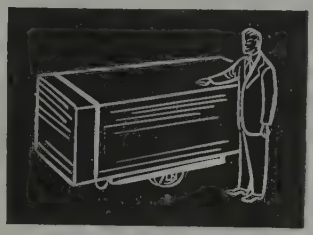
2 NEW HOT PLATE PRESSING — G-P Lifetime Plywood Sheathing is produced by hot plate pressing, resulting in a dryer, lighter, flatter, stronger panel of greater dimensional stability able to withstand weather changes without effect.





3 NEW EDGE SEALING — Edge sealing of G-P Lifetime Sheathing gives added protection at critical point . . . completely encloses vulnerable edges of glue line from outside elements. All panels are color-marked for easy identification of type and thickness.

4 NEW PACKAGING — 4′ x 8′ panels of G-P Lifetime Sheathing are available in all thicknesses, packaged and steel strapped for economy and ease of handling.



5 NEW SAVINGS—Large panels go up faster, saving time and labor; there's less waste; they require fewer nails. Plywood sheathing frequently eliminates the need for corner bracing and reduces framing requirements. And with dependable G-P Lifetime Sheathing, available the year around, *it's guaranteed for the life of the house.*

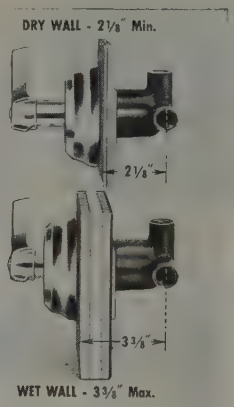
It pays to use the best!
Specify G-P Lifetime Plywood Sheathing

For further information, see your G-P plywood supplier or write:

GEORGIA—PACIFIC
PLYWOOD COMPANY

Dept. HH-8, 270 Park Avenue, New York 17, N. Y.

NEW PRODUCTS



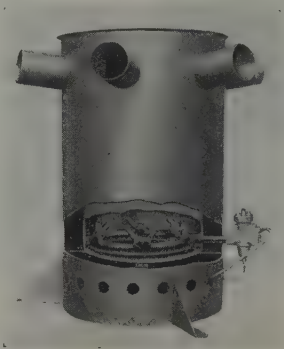
ADJUSTABLE ESCUTCHEONS ease roughing-in problem, adapt to wet or dry wall

Dimensions of shower and bath valves seem unimportant in house construction, yet the choice of a wet or dry plaster wall usually demands different valves, for the use of regular plaster means a difference in wall thickness of over 1". Kohler's *Niedecken* mixers now have escutcheons adjustable over the entire range of wall thickness up to 3⅜". So the same valves can be used with either construction.

Manufacturer: Kohler Co.,
Kohler, Wis.

PORTABLE SALAMANDER uses liquid petroleum fuel, protects against fumes or fire

Plaster, concrete or water pipes need no protection against freezing in June, but this new *Heat Kit* L. P.-fueled salamander will remind provident builders that winter always comes, and a portable source of heat can add to usable work days.



The 50,000-Btu unit needs only be hooked to a tank of gas, and the *Honeywell* pilot stat insures 100% shutoff and safe lighting. Six open-end pipes permit heat ducts to be extended into adjacent areas. Price: $69.50, F.O.B.

Manufacturer: Arthur H. Kitson, Inc.
20818 Harper Ave.
Detroit, Mich.

Technical Publications, p. 214

Wide variety of SCHLAGE designs adds personality to your homes

Take advantage of Schlage's wide variety of lock designs and finishes

Individualized doorway treatments are a powerful, yet inexpensive way to add personality to your homes. By combining the many Schlage lock designs, finishes and ornamental escutcheons you can create a large number of lock stylings to give the doors of every one of your homes a different look. This has a two-fold advantage: it offers buyers an additional distinctive feature...and you can use the famous Schlage quality as an extra sales point. When you plan your homes, include *Schlage personalized doorway treatments!*

The front door is a buyer's first introduction to your homes

Choose an unusual and dramatic entrance door lock from the lock stylings pictured in the middle row, above. Or, if you are building luxury homes you'll want the rare elegance of the locksets pictured in the bottom row. With Schlage you can even make your interior locks contribute to the attractiveness of your home when you choose from the beautiful designs in the uppermost row.

All of these locks are available in brass, bronze, chrome, or aluminum finishes . . . polished to a gleaming luster or brushed to a soft sheen.

When you plan colors, tiles, and other features—include a variety of Schlage lock stylings. They are important details that add personality and saleability to your homes.

FREE—Write for "Home Planners' Guide," 650-E
It shows in full color many lock stylings and doorway treatments that can be created with Schlage Locks.

®SCHLAGE©

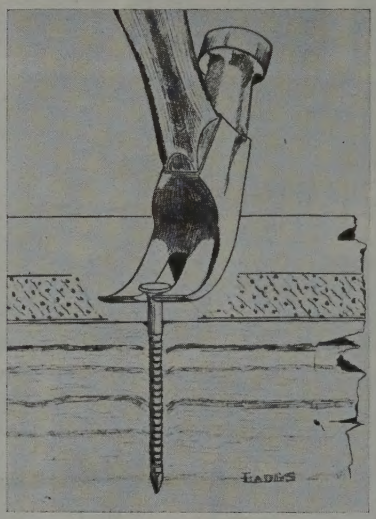
"THE WORLD'S MOST IMITATED LOCK"

SCHLAGE LOCK COMPANY SAN FRANCISCO NEW YORK VANCOUVER, B. C.

NEW PRODUCTS *continued from p. 150*

lost holding power. Within three weeks, the initial average holding power of 217 lb. had decreased to 133 lb., or 61%. On the other hand, the [grooved] nail held its own or even increased. Both had approximately the same initial holding strength.

"The frequent failure of the plain-shank nail during service obviously can be explained by the observed, drastic loss in holding power. [It] occurred when the lumber shrank away from the smooth nail shank, and the frictional bond was no longer satisfactory. The increase in holding power of threaded nails resulted from the increased



sheer resistance of the wood fibers as the moisture decreased. Such increase resulted, of course, in an even tighter grip by the nail."

The grooved nail is furnished in two sizes for dry-wall application, 1⅛" for use with ¾" board, and 1⅜" for the ½" thickness. Packaged in the common 100-lb. kegs, the grooved nails will average about 13¢ to 15¢ per lb. more than cement-coated, or less than $2.50 for an average size house (2½ lb. will apply 1,000 sq. ft. of gypsum board).

The threads of the nail do not have to be machined, as many screws are, but are rolled onto the steel shank with dies, so that a manufacturer can turn out the nails in quantity. The nail can be made by a number of producers.

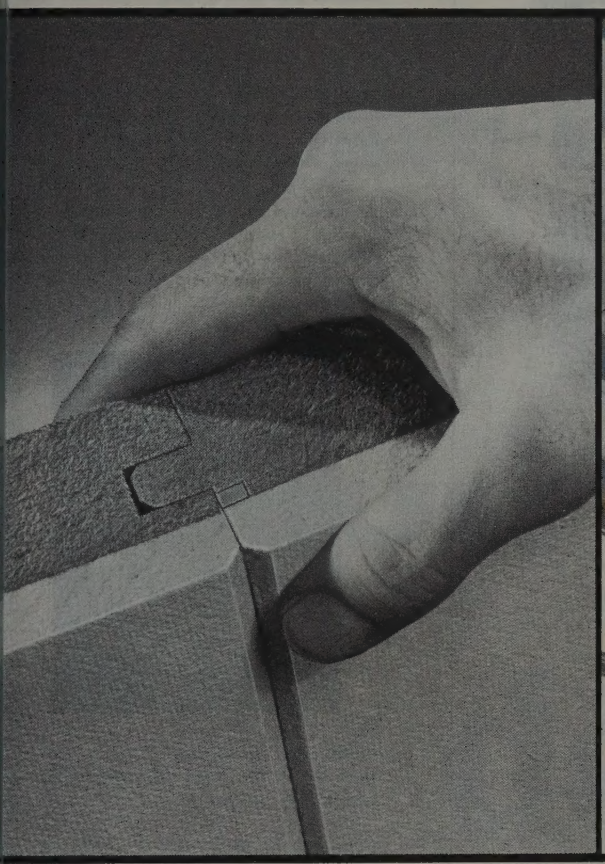
Use of the *Stronghold* nail does not change previous "good practice" recommendations for dry wall: "dimpling" the paper surface with the final, setting blow of the hammer, good taping of joints, and feathering of all tape cement. Accurate framing is also required, for as one applicator remarked:

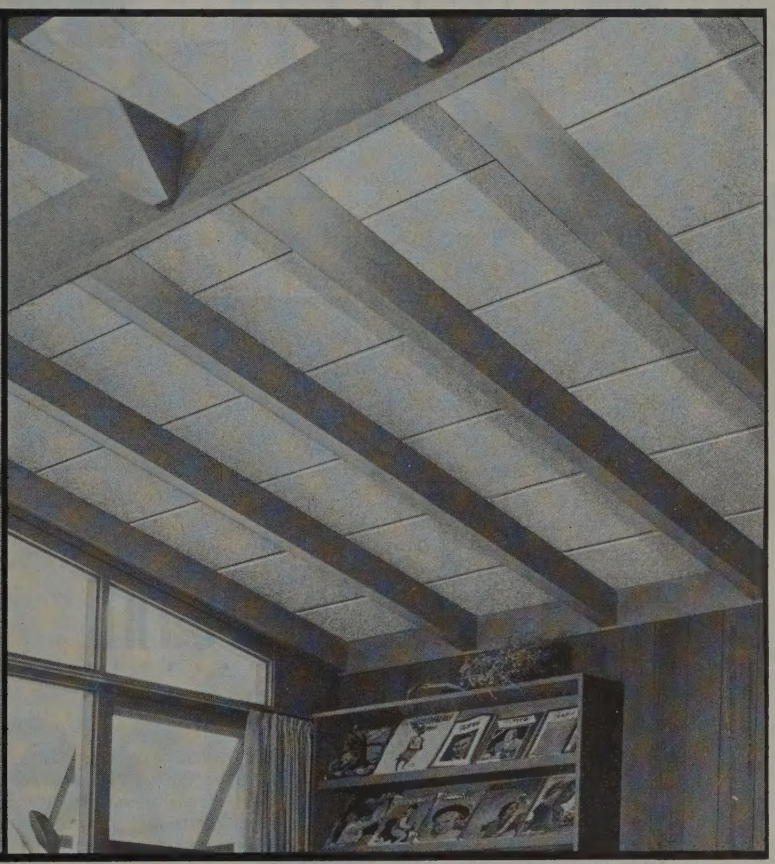
"If a stud is out of line, and the nail doesn't get a good 'bite,' any nail will pop."

Evaluation of further data and field tests on the grooved nail are still being made by the Gypsum Assn. committee, under the chairmanship of US Gypsum's John Robertson, and it will be up to them to advise whether or not this new nail should be recommended as a new dry-wall standard.

Manufacturer: Independ. Nail & Packing Co. Bridgewater, Mass.

saves $95.00
Roof Deck application!





2. It's insulation . . . No need for other insulation. Two-inch Roof Deck is comparable to 2″ wood deck plus 1″ fiberboard insulation and meets F.H.A. heat loss requirements for roof and ceiling construction. Absorbs sound better than wood or plaster . . . makes homes quieter and more liveable. Exclusive vapor barrier combination protects against condensation within the unit in any climate.

3. And Finished Ceiling. The underside of Insulite Roof Deck is finished with a white flame-resistant surface at the factory. Simply lay Roof Deck over prefinished beams and the ceiling is done. No need to plaster, paint, stain or wax. Reduces labor and material costs. Insulite Roof Deck is available in 2′x8′ units, 1½″, 2″ and 3″ thick with or without Insulite's exclusive vapor barrier.

Send for complete information now. Actual on-the-job pictures and construction details show how to use new Insulite Roof Deck to build better for less. Write Insulite, Minneapolis 2, Minn.

Build and insulate with double-duty

INSULITE

The original structural insulation board

INSULITE DIVISION, Minnesota and Ontario Paper Company, Minneapolis 2, Minnesota

TECHNICAL PUBLICATIONS

STONE. Lenroc Stone. Finger Lakes Stone Co., Inc., Dept. HH, 189 Ellis Hollow Rd., Ithaca, N.Y. 4 pp. 8½" x 11"

General specifications of five categories of stone available from the Finger Lakes quarry, as well as color photographs of effects achieved with natural stone. Order and shipping information.

SLIDING WINDOW WALLS. Glide Duo-Glaze Windows and Doors. Glide Windows, Inc., Dept. HH, 7463 Varna Ave., North Hollywood, Calif. 6 pp. 8½" x 11"

Architectural details and specifications for this line of extruded aluminum and stainless-steel windows and doors, which are engineered to accommodate either ½" or 1" double glazing.

HARDWARE. Special Nails, Rivets, Screws. John Hassall, Inc., Dept. HH, Westbury, Long Island, N.Y. 34 pp. 8½" x 11"

A cataloguing of fasteners of many kinds, with charts and descriptions that should insure that the exactly right fastener be used on every job.

AIR CONDITIONING. Westinghouse Home Precipitron, Bul. 1470. Westinghouse Electric Corp., Dept. HH, Air Conditioning Div., Hyde Park, Boston 36, Mass. 12 pp. 8½" x 11"

Operating data, installation details and specifications for Westinghouse's electronic air filterer for residential use. Photographs and drawings of typical installations.

LIGHTING. Catalogues R-8 and S-3. Prescolite Mfg. Corp., Dept. HH, 2229 44th St., Berkeley 10, Calif. 12 and 8 pp. 8½" x 11"

Lighting fixtures, both recessed (R-8) and surface units (S-3), fully illustrated, with detailing dimensions, wattage and framing details for flush lights. All fixtures are designed in the contemporary idiom.